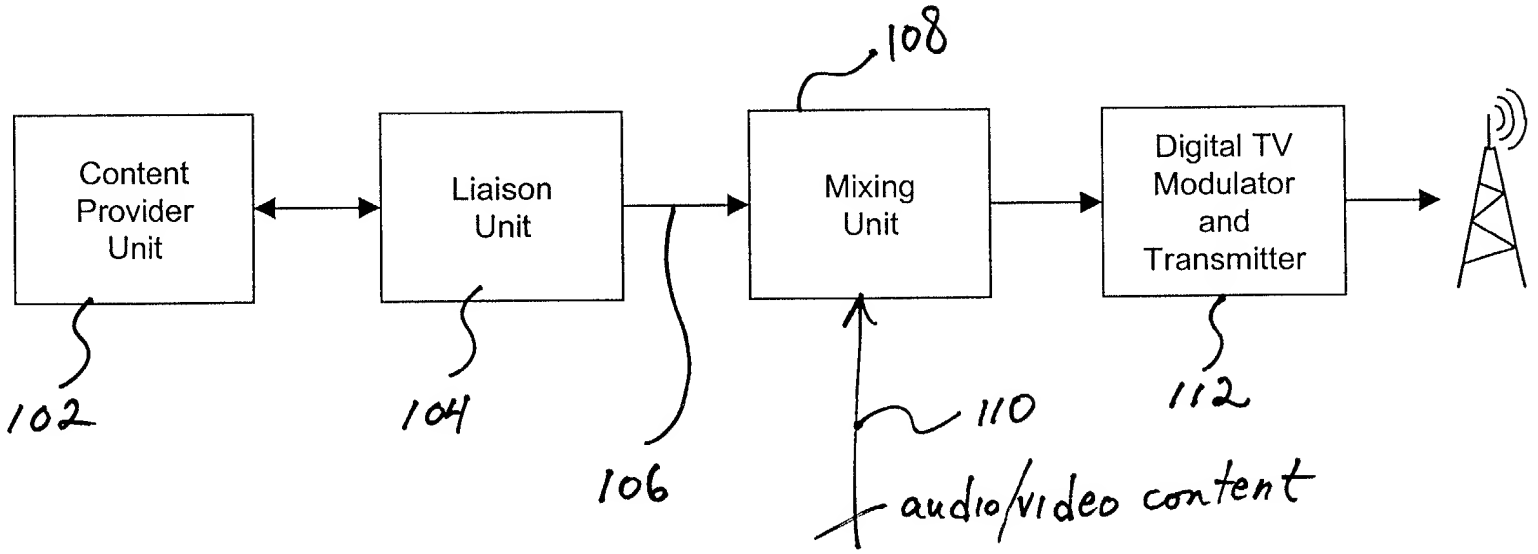

Content Provider Unit
Liaison Unit
Mixing Unit
Digital TV Modulator and Transmitter
108
102
104
106
110
112
audio/video content

Figure 1

EXPRESS MAIL

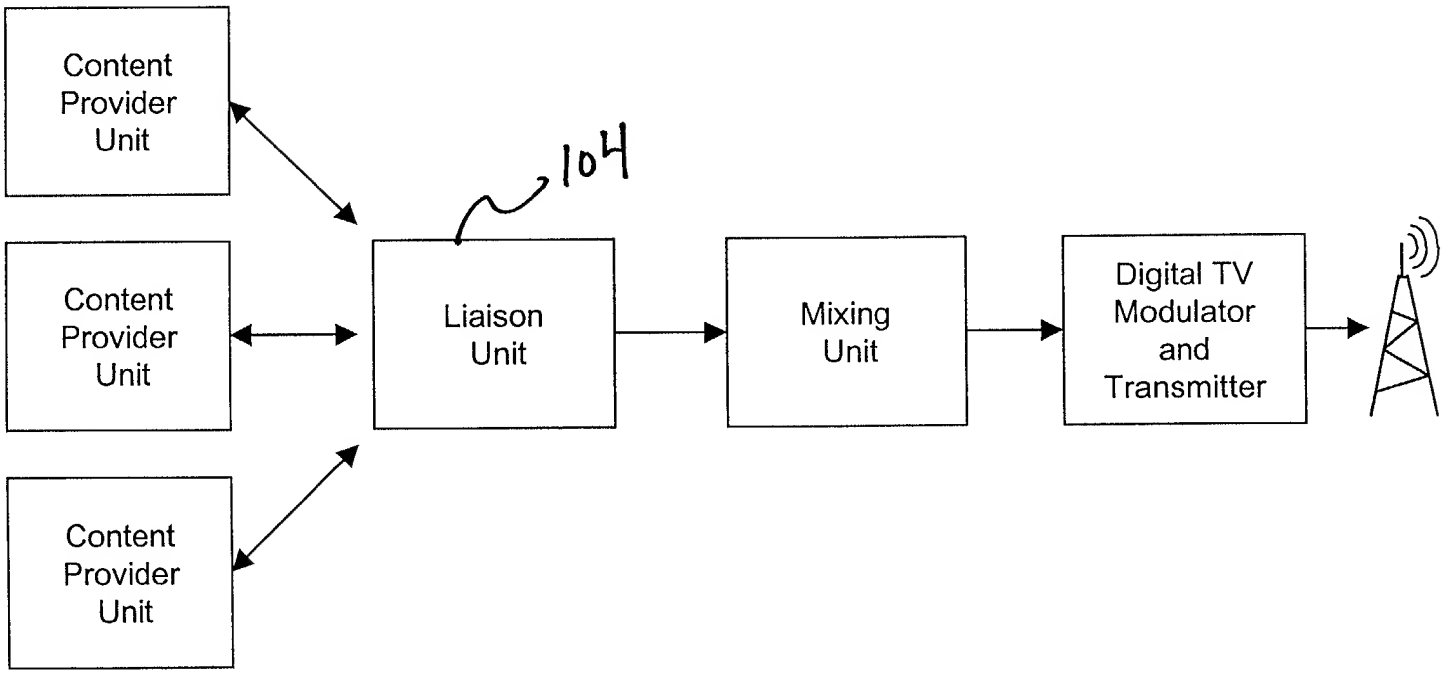


Figure 2

EP 2 276 190 A1

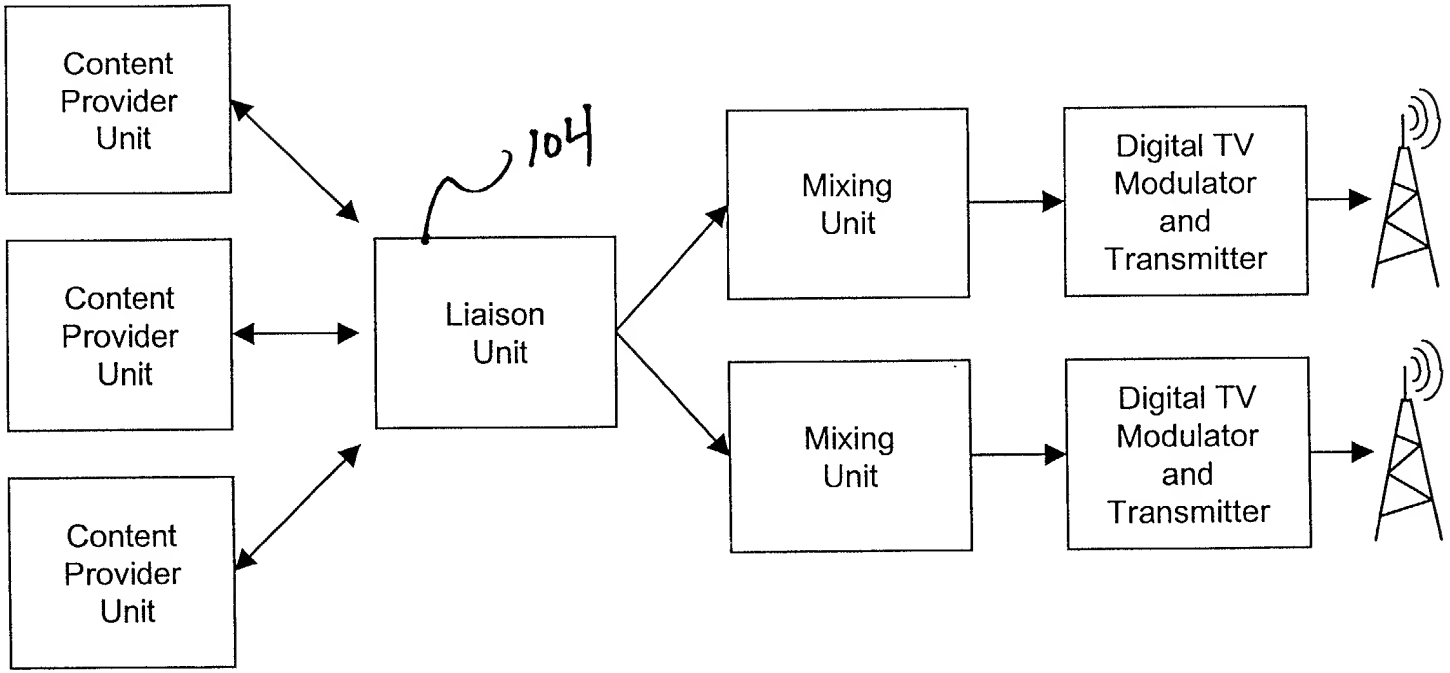


Figure 3

TRACTOR SESSIONS

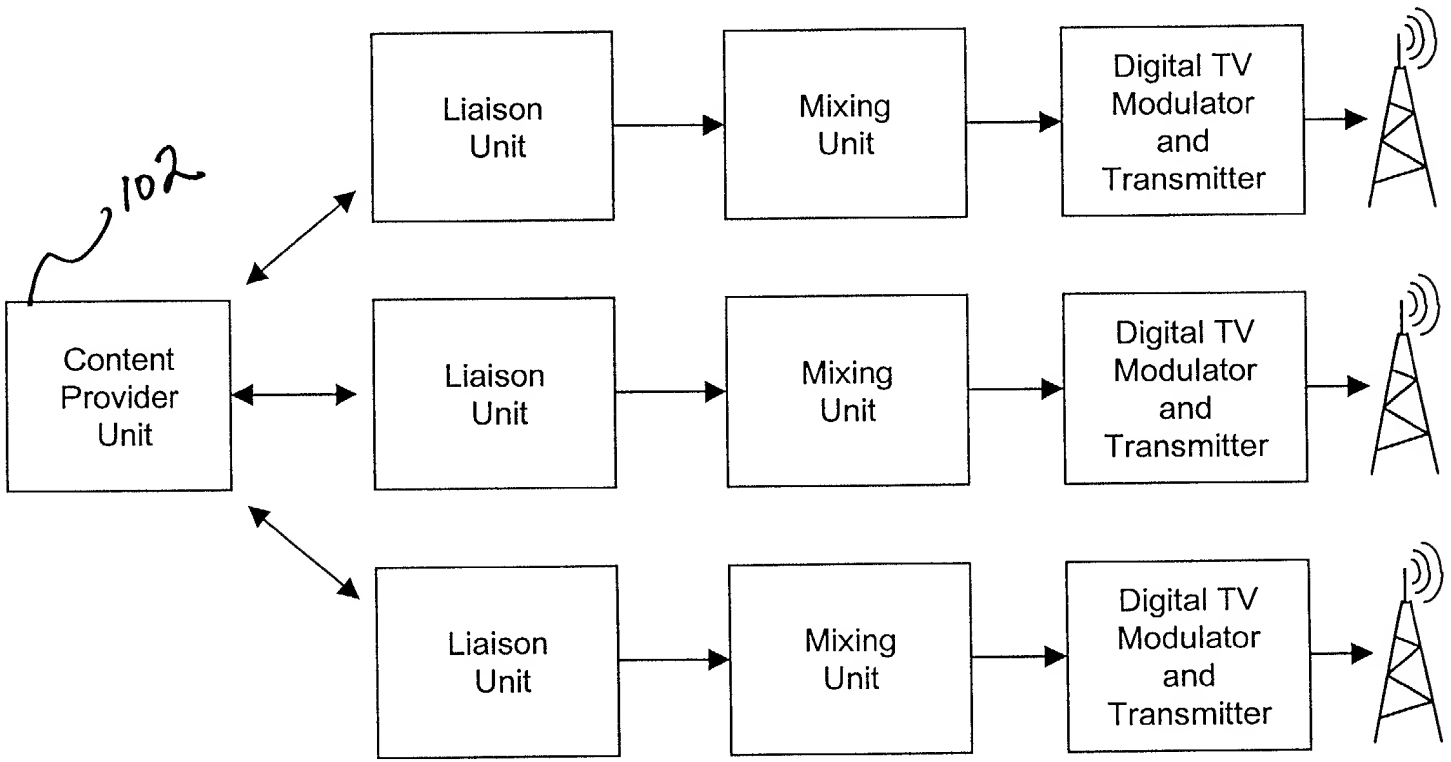


Figure 4

EP 2 276 240 A1

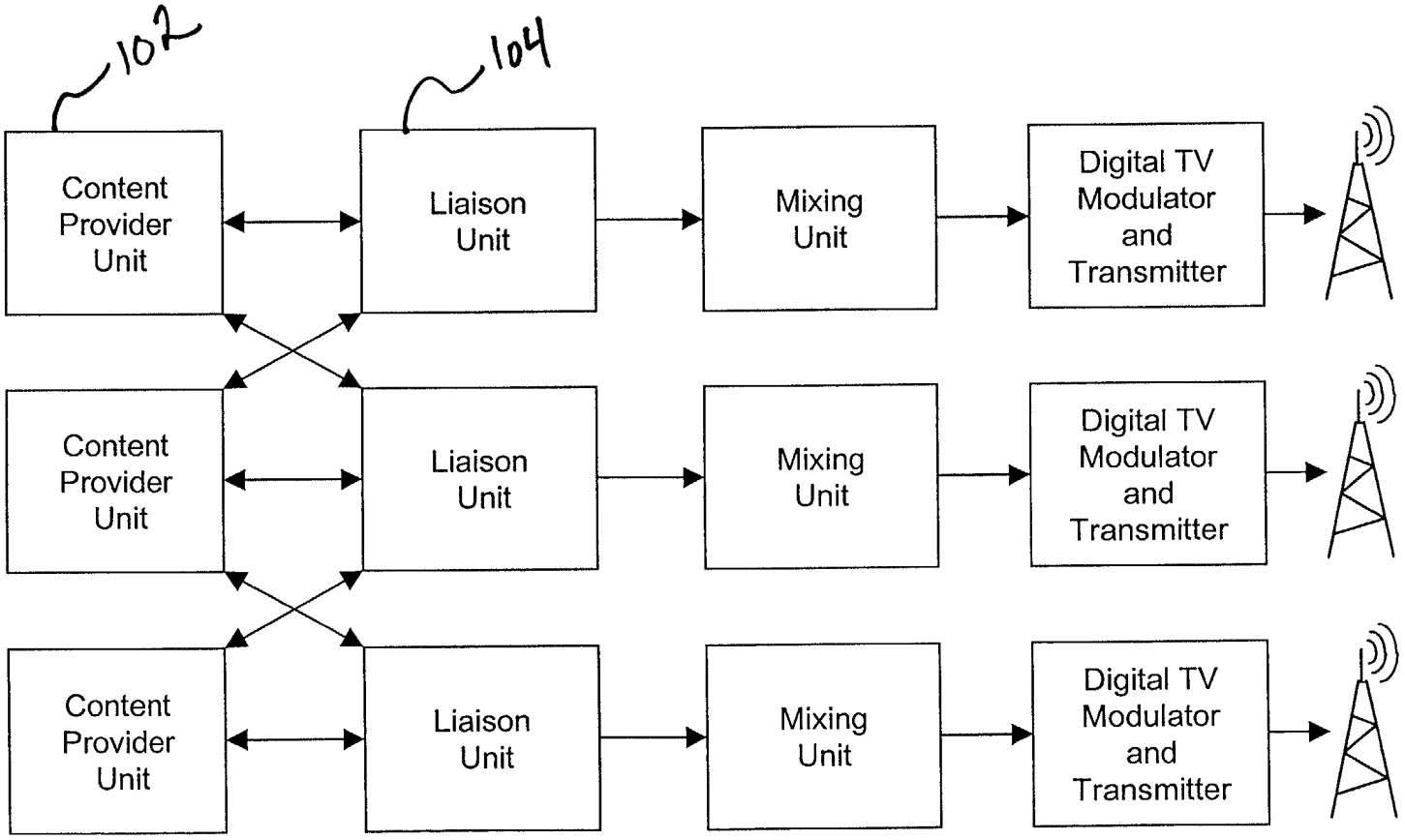


Figure 5

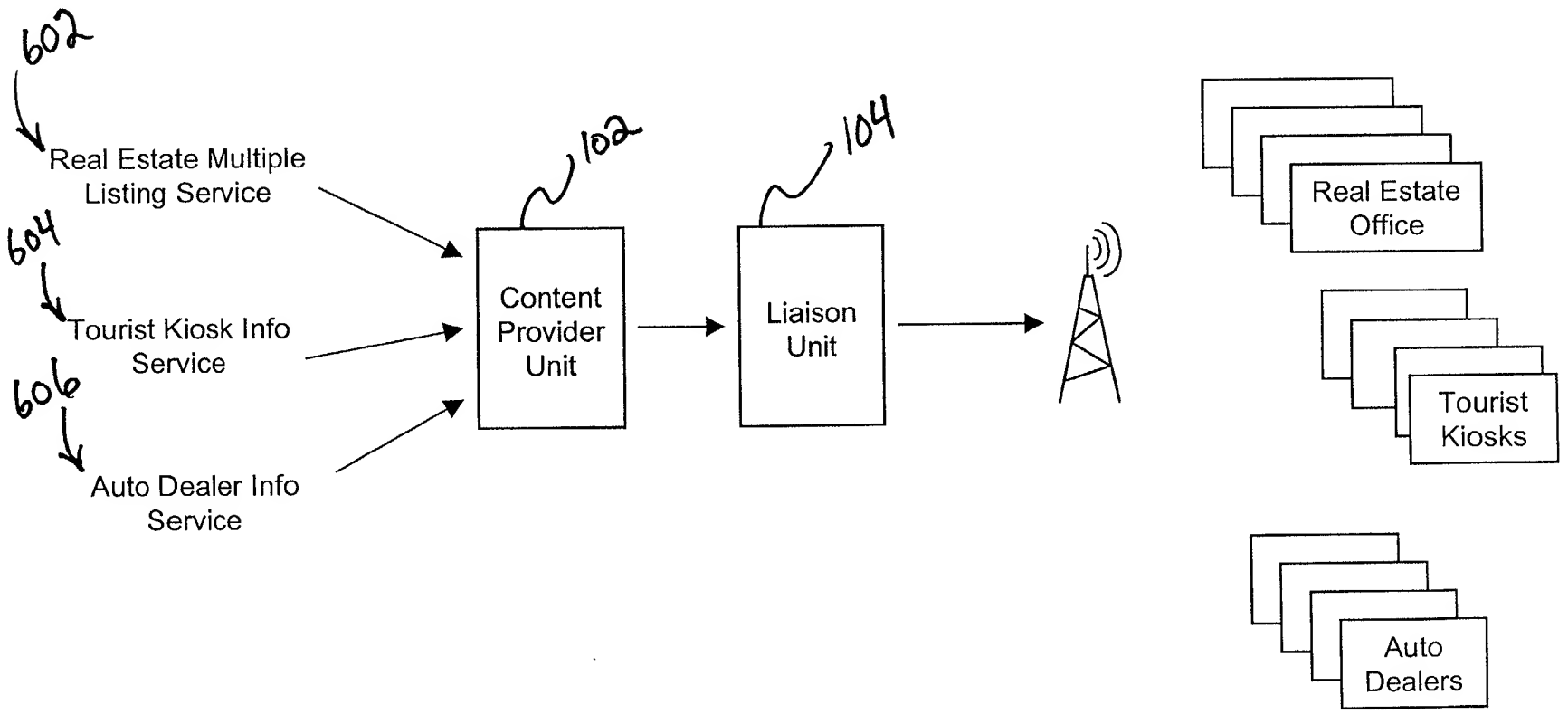

602
Real Estate Multiple Listing Service
604
Tourist Kiosk Info Service
606
Auto Dealer Info Service
102
Content Provider Unit
104
Liaison Unit
Real Estate Office
Tourist Kiosks
Auto Dealers

Figure 6

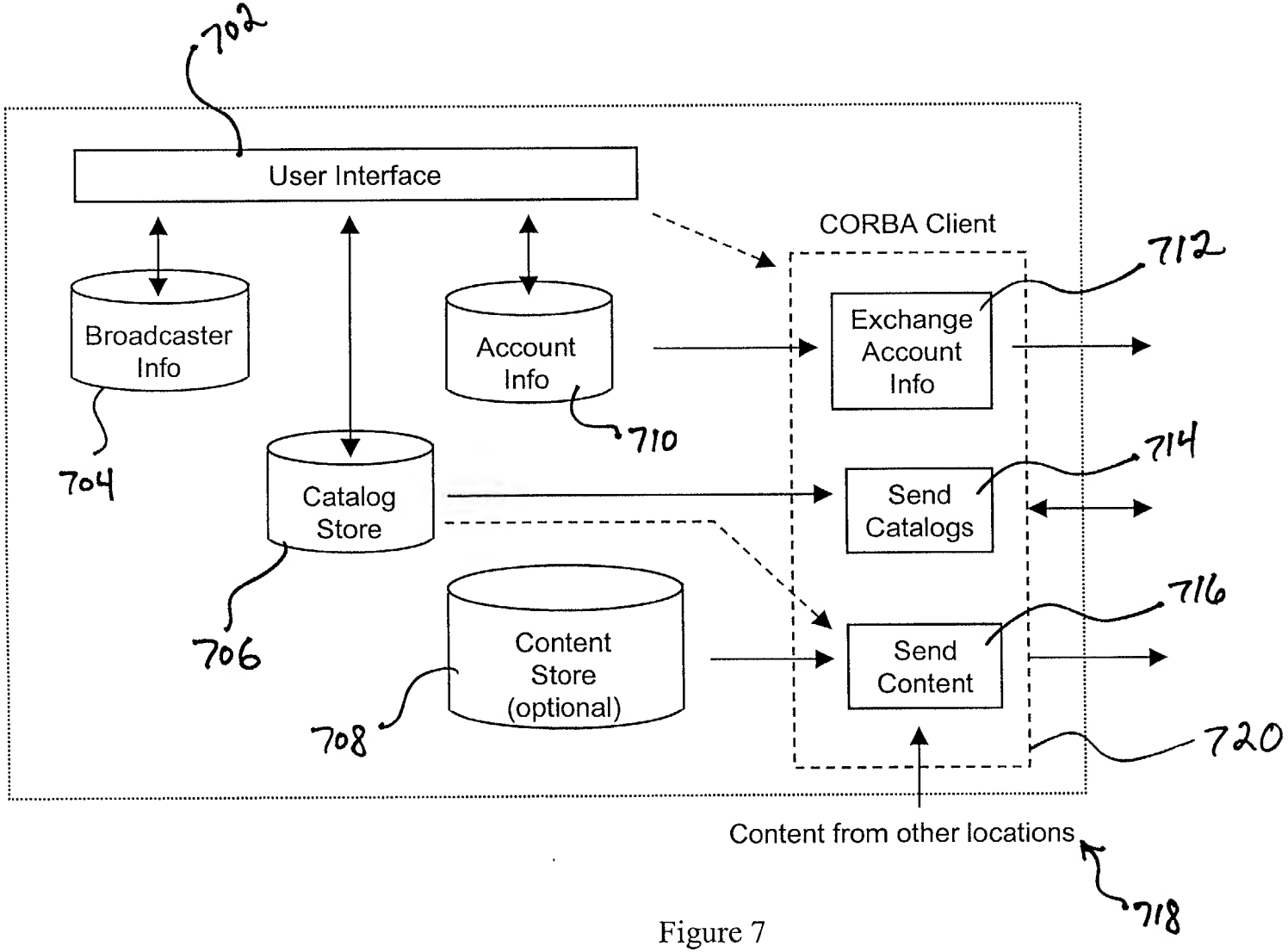

702
User Interface
CORBA Client
712
Exchange Account Info
Broadcaster Info
Account Info
710
704
Catalog Store
714
Send Catalogs
706
716
Content Store (optional)
Send Content
708
720
Content from other locations
718

Figure 7

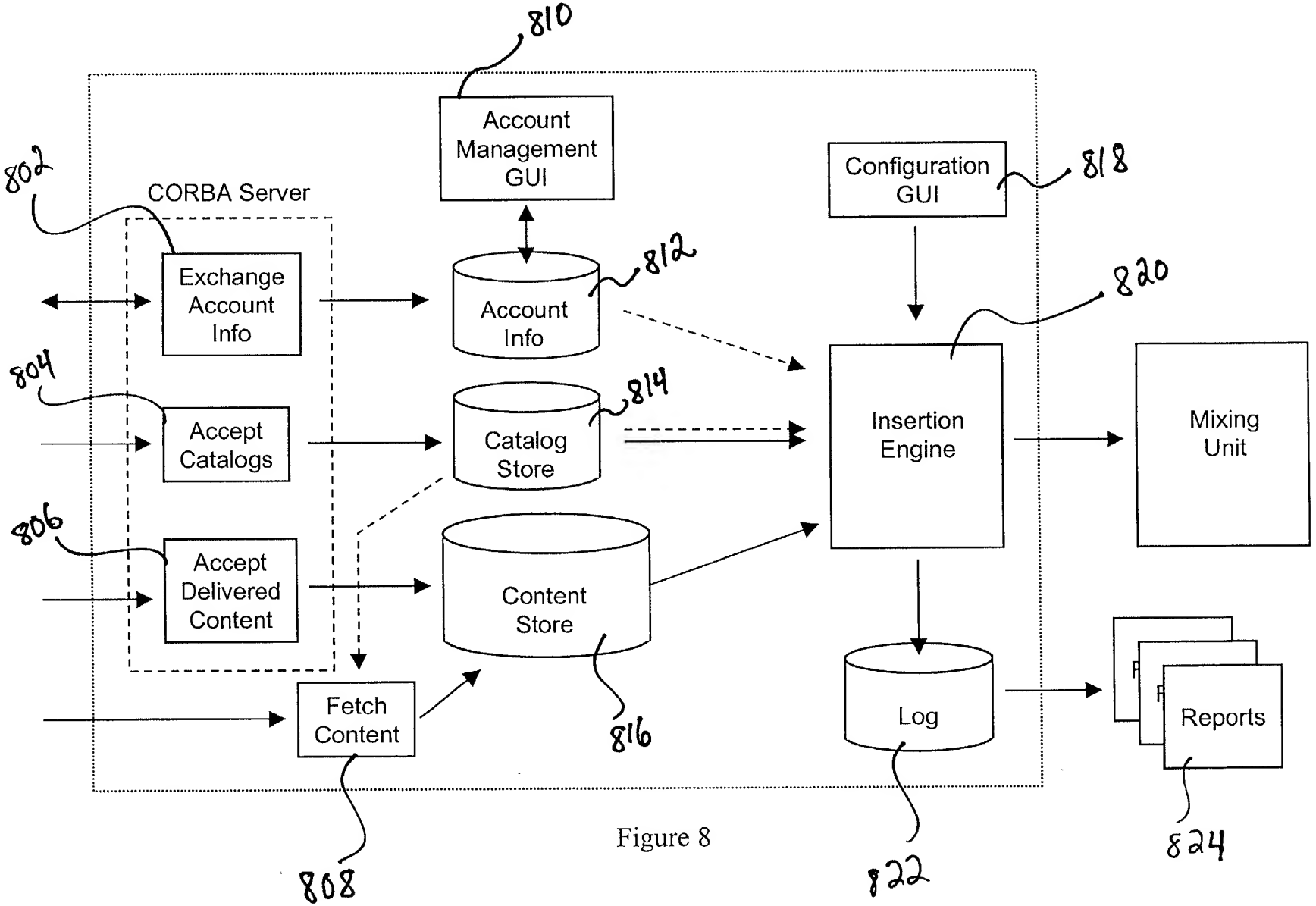

810
Account Management GUI
802
CORBA Server
Configuration GUI
818
Exchange Account Info
812
Account Info
820
804
Accept Catalogs
814
Catalog Store
Insertion Engine
Mixing Unit
806
Accept Delivered Content
Content Store
Log
Reports
Fetch Content
816
808
822
824

Figure 8

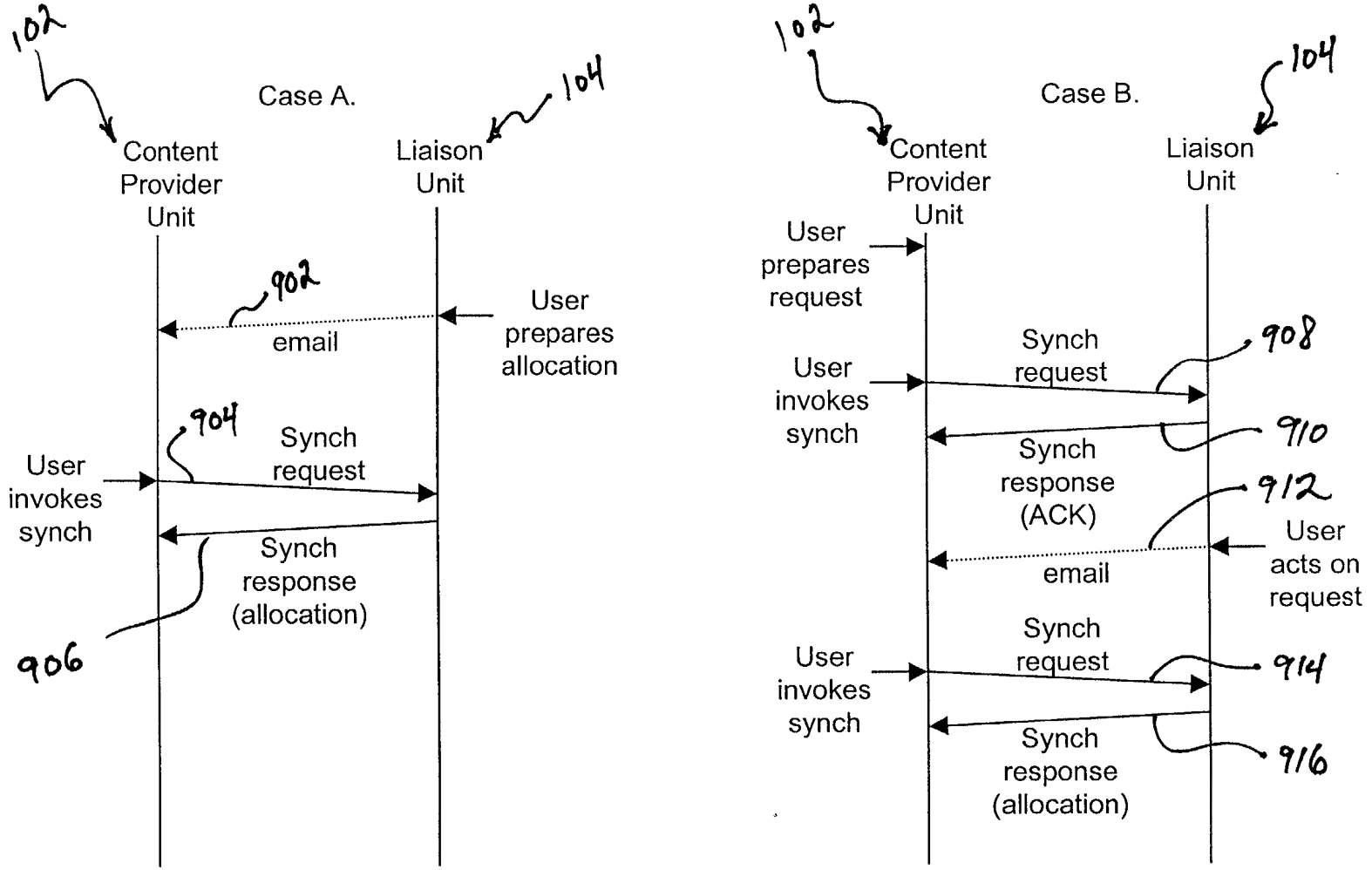

102
Case A.
104
Content Provider Unit
Liaison Unit
902
email
User prepares allocation
904
User invokes synch
Synch request
Synch response (allocation)
906
102
Case B.
104
Content Provider Unit
Liaison Unit
User prepares request
User invokes synch
Synch request
908
Synch response (ACK)
910
912
email
User acts on request
User invokes synch
Synch request
914
Synch response (allocation)
916

Figure 9

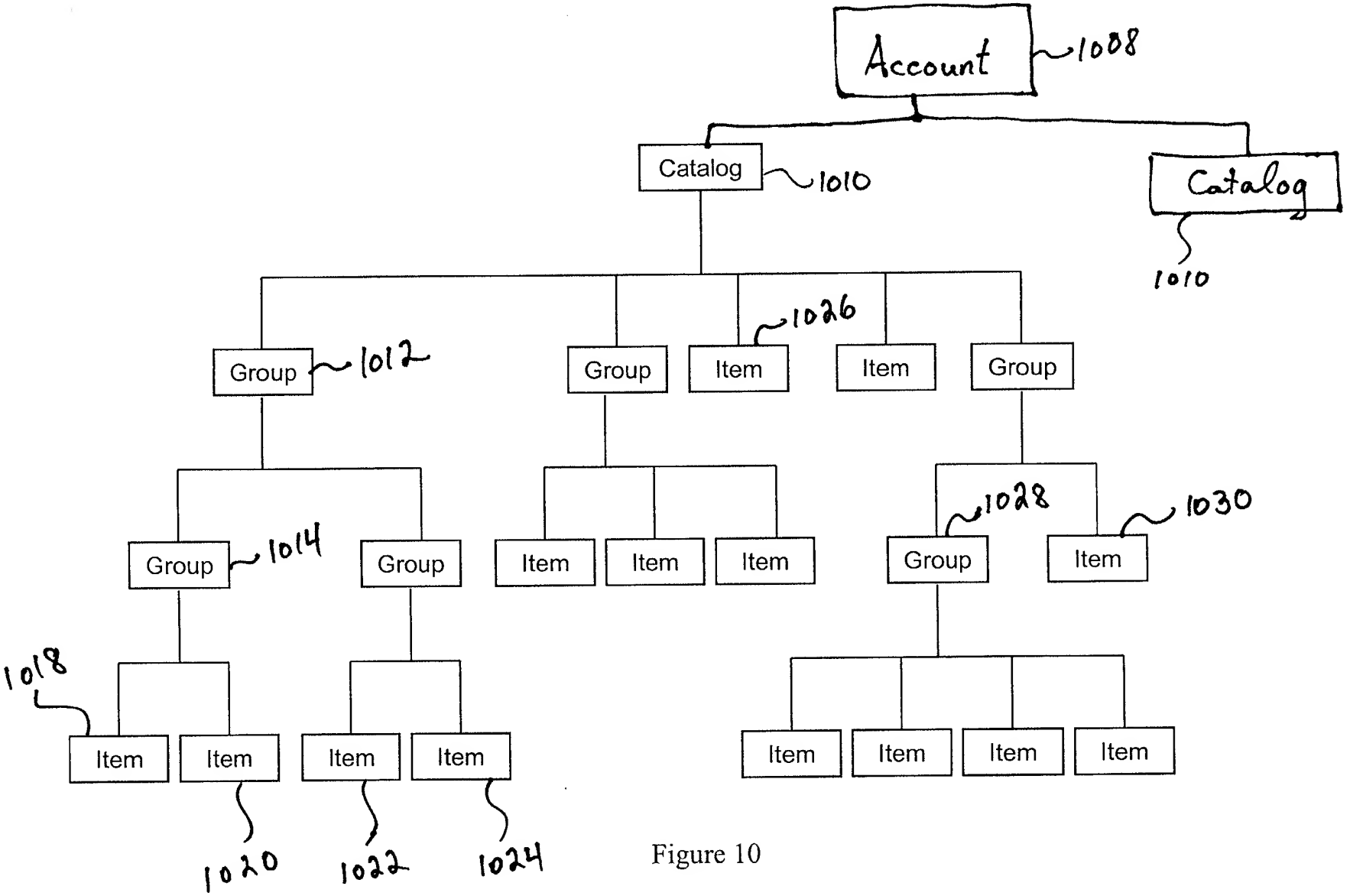

Account
1008
Catalog
1010
Catalog
1010
Group
1012
Group
Item
1026
Item
Group
Group
1014
Group
Item
Item
Item
Group
1028
Item
1030
1018
Item
Item
Item
Item
Item
Item
Item
Item
1020
1022
1024

Figure 10

EDC1H01 S1S9Z26D

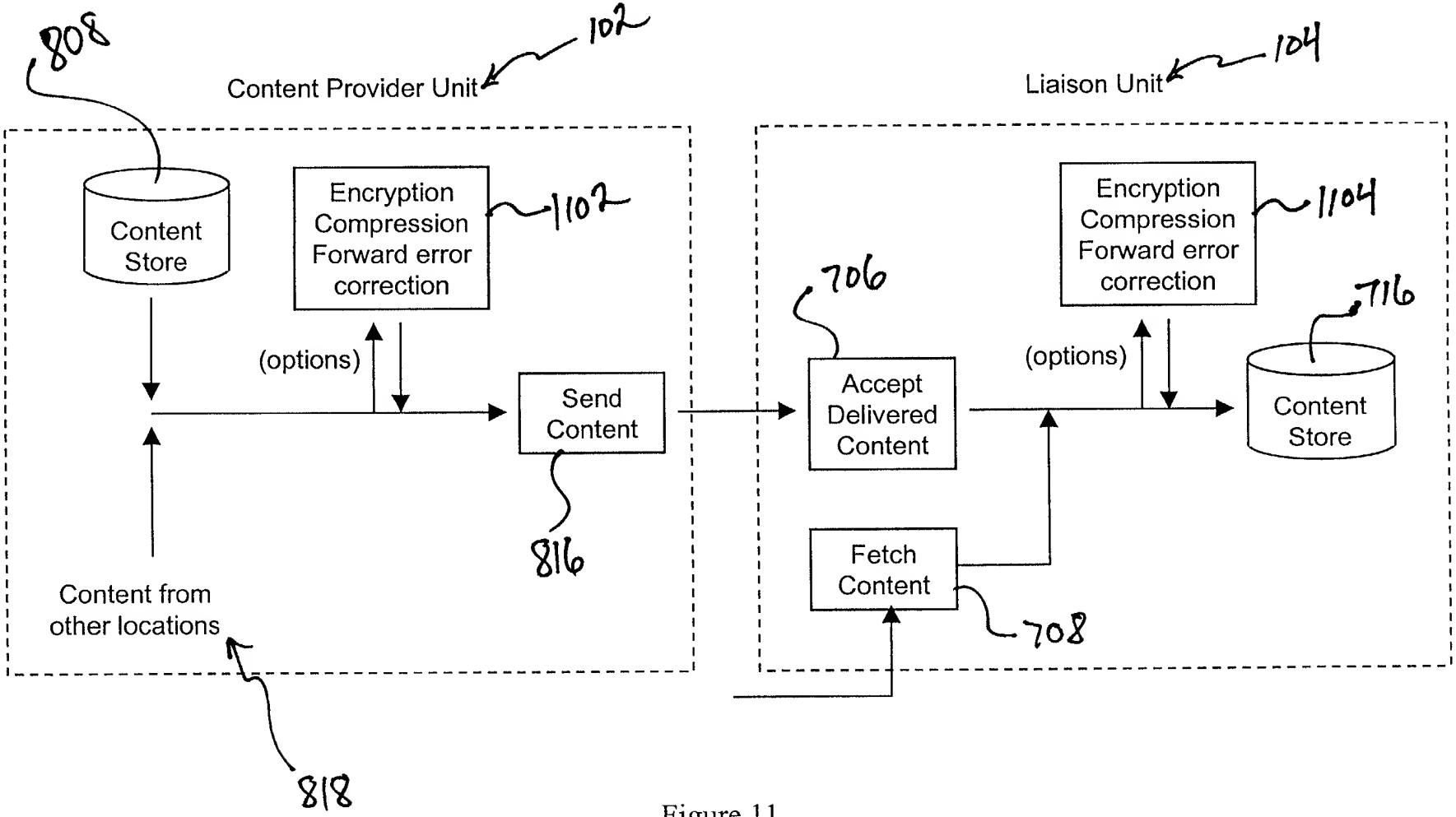


Figure 11

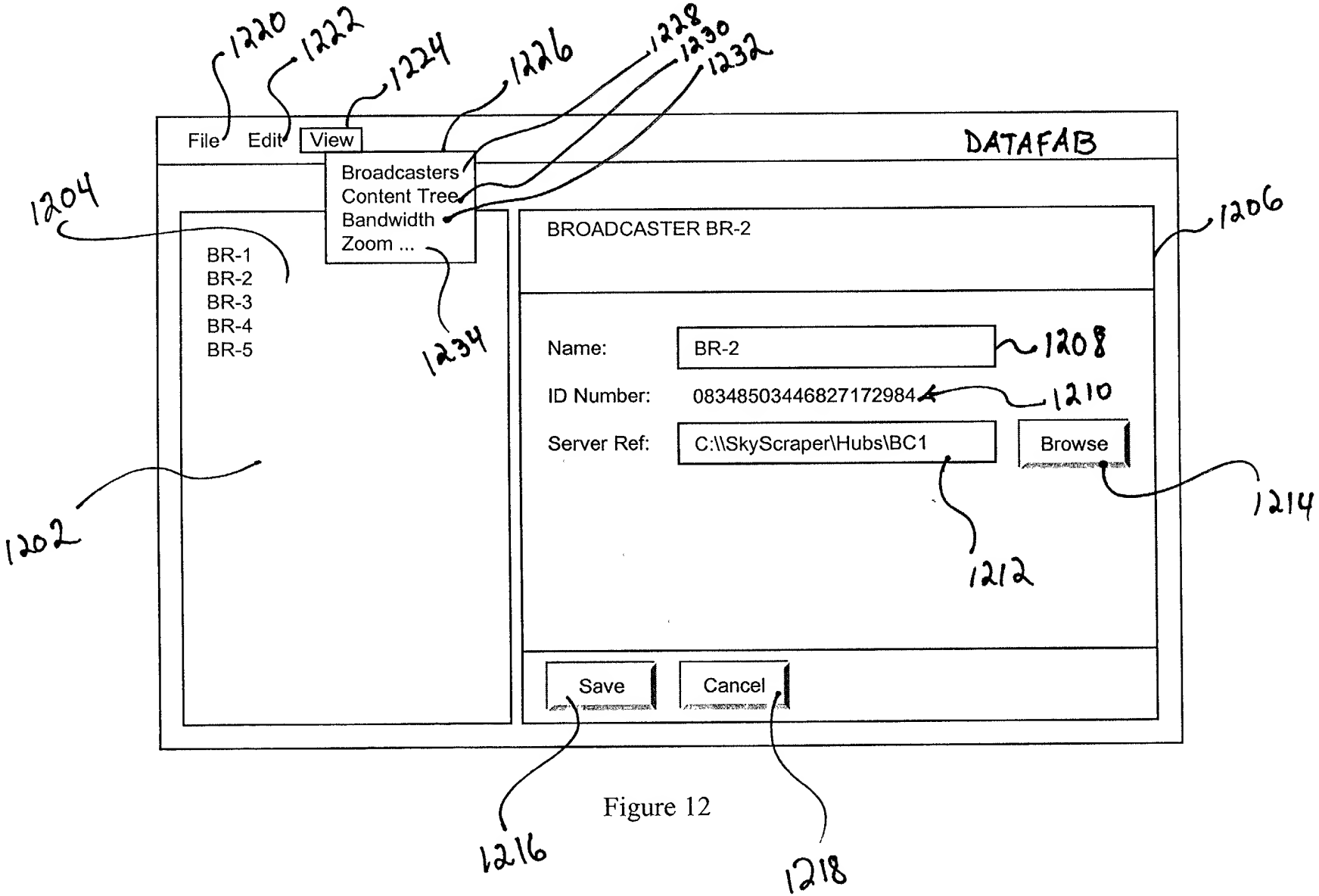

1220
1222
1224
1226
1228
1230
1232
File
Edit
View
DATAFAB
Broadcasters
Content Tree
Bandwidth
Zoom ...
1204
BR-1
BR-2
BR-3
BR-4
BR-5
1234
BROADCASTER BR-2
1206
Name:
BR-2
1208
ID Number:
08348503446827172984
1210
Server Ref:
C:\\SkyScraper\Hubs\BC1
Browse
1214
1202
1212
Save
Cancel
1216
1218

Figure 12

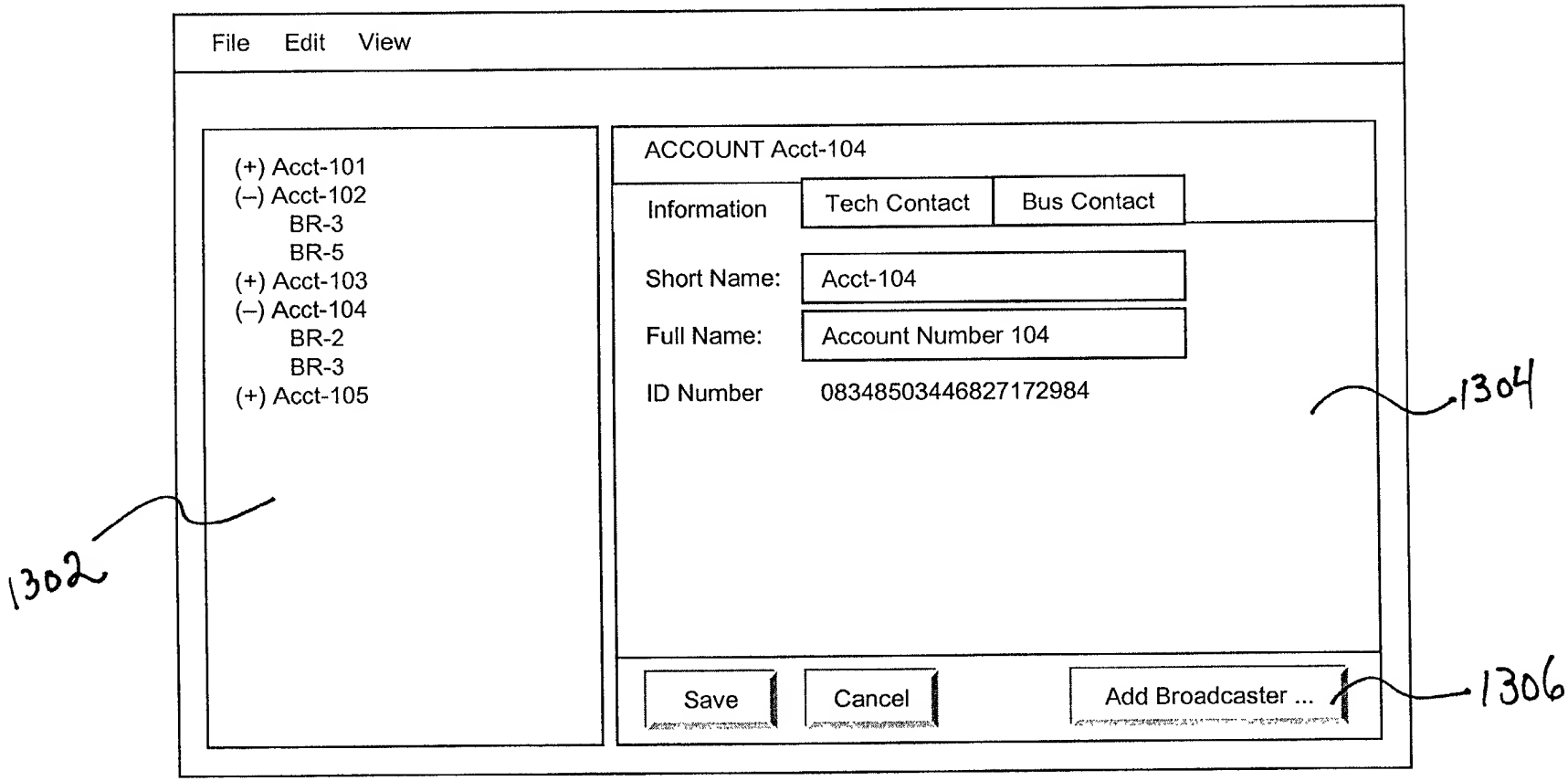

File
Edit
View
(+) Acct-101
(–) Acct-102
BR-3
BR-5
(+) Acct-103
(–) Acct-104
BR-2
BR-3
(+) Acct-105
ACCOUNT Acct-104
Information
Tech Contact
Bus Contact
Short Name:
Acct-104
Full Name:
Account Number 104
ID Number
08348503446827172984
Save
Cancel
Add Broadcaster ...
1302
1304
1306

Figure 13

FOREIGN PATENT DOCUMENT

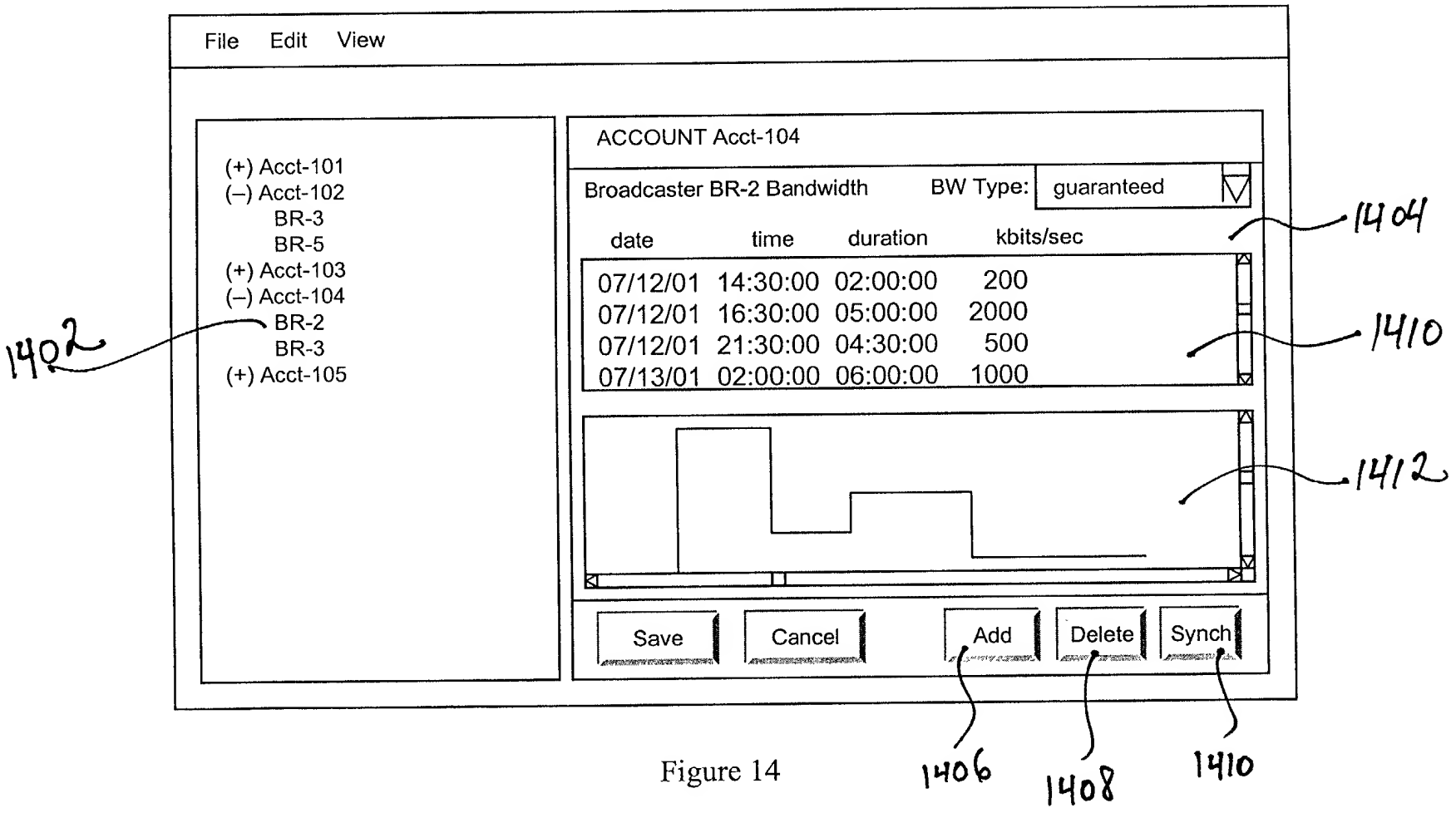


Figure 14

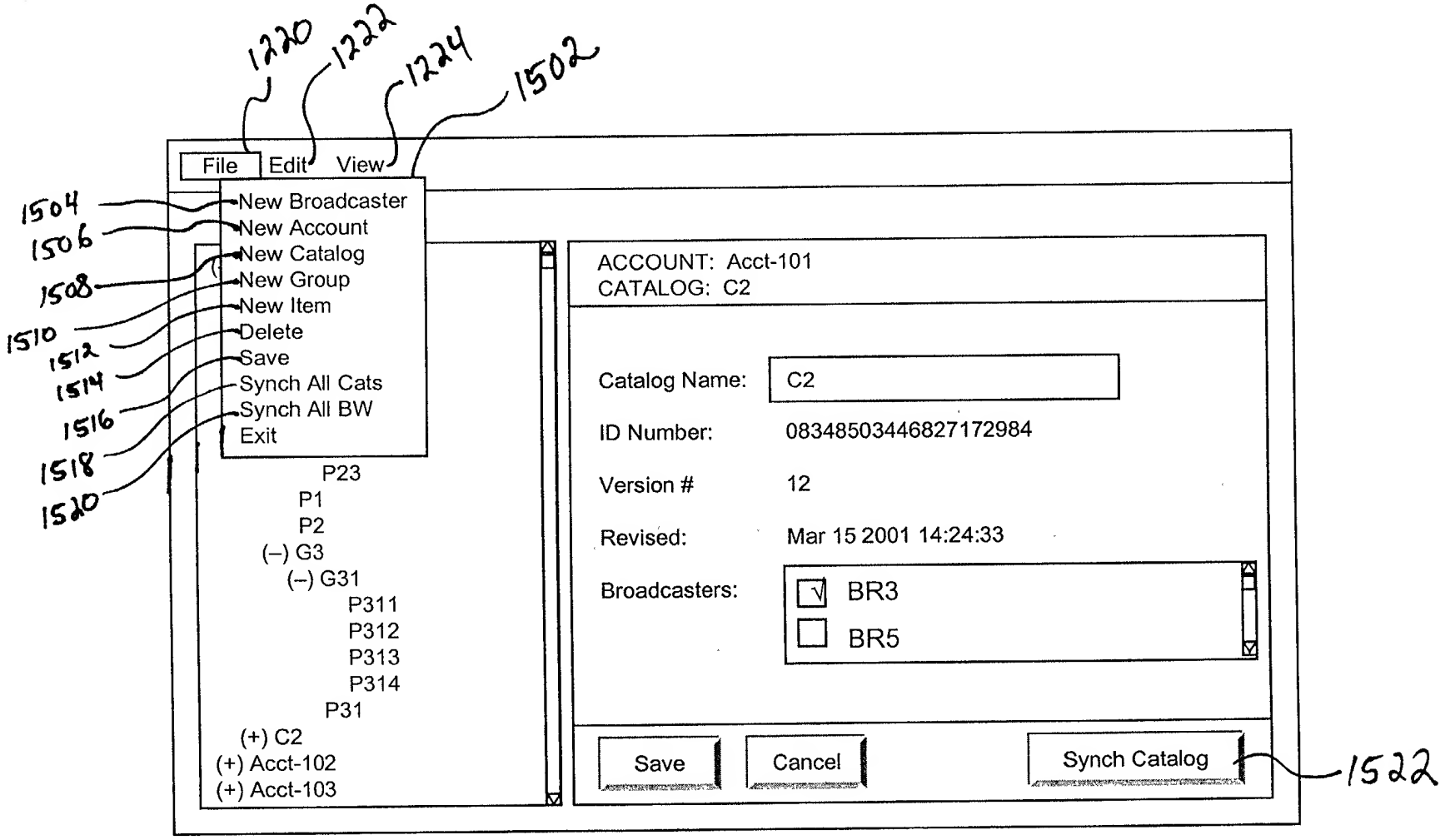

1220
1222
1224
1502
File
Edit
View
1504
1506
1508
1510
1512
1514
1516
1518
1520
New Broadcaster
New Account
New Catalog
New Group
New Item
Delete
Save
Synch All Cats
Synch All BW
Exit
P23
P1
P2
(–) G3
(–) G31
P311
P312
P313
P314
P31
(+) C2
(+) Acct-102
(+) Acct-103
ACCOUNT: Acct-101
CATALOG: C2
Catalog Name:
C2
ID Number:
08348503446827172984
Version #
12
Revised:
Mar 15 2001 14:24:33
Broadcasters:
BR3
BR5
Save
Cancel
Synch Catalog
1522

Figure 15

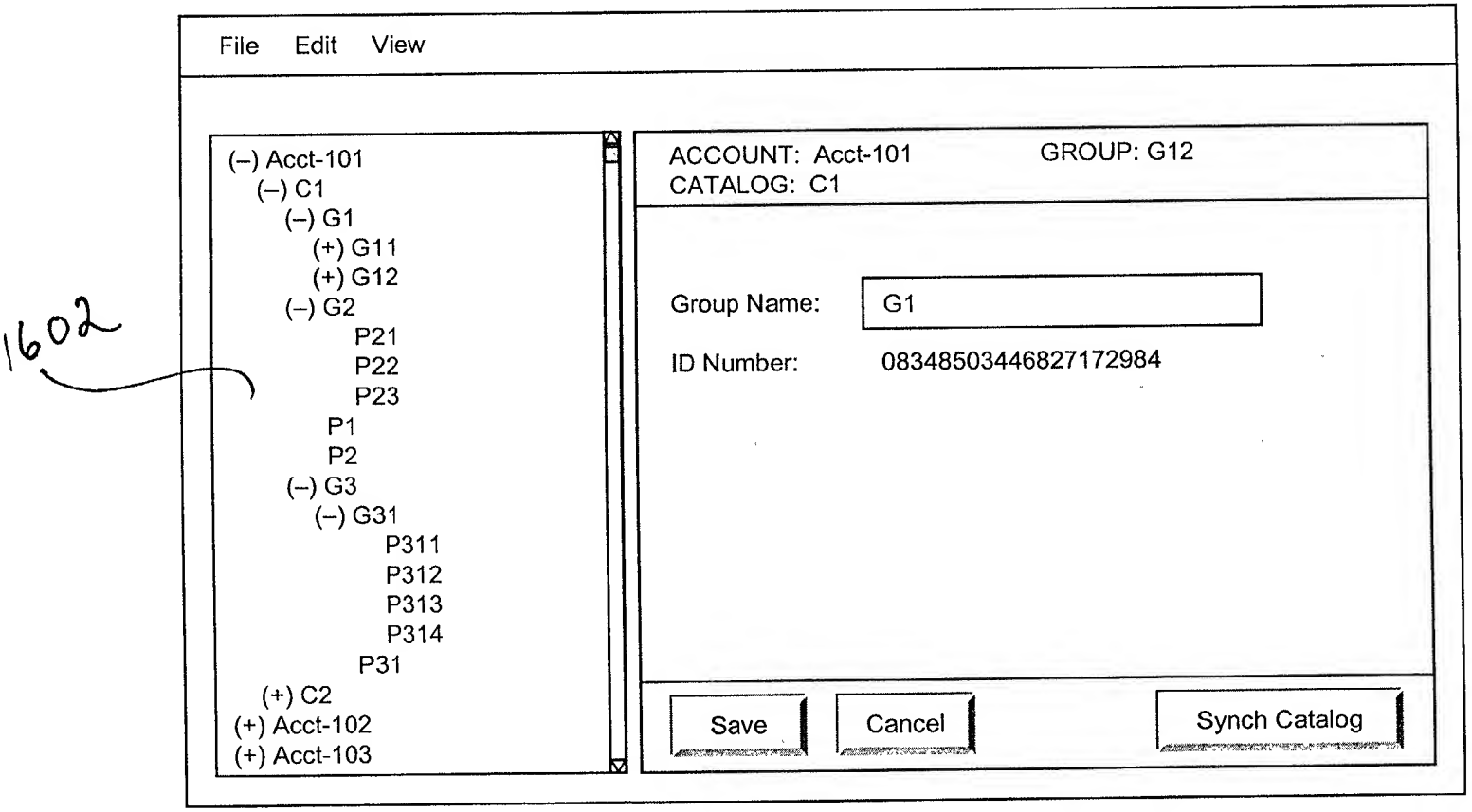

File
Edit
View
(–) Acct-101
(–) C1
(–) G1
(+) G11
(+) G12
(–) G2
P21
P22
P23
P1
P2
(–) G3
(–) G31
P311
P312
P313
P314
P31
(+) C2
(+) Acct-102
(+) Acct-103
ACCOUNT: Acct-101
GROUP: G12
CATALOG: C1
Group Name:
G1
ID Number:
08348503446827172984
Save
Cancel
Synch Catalog
1602

Figure 16

FOZ4HD 9F5S5E5SD

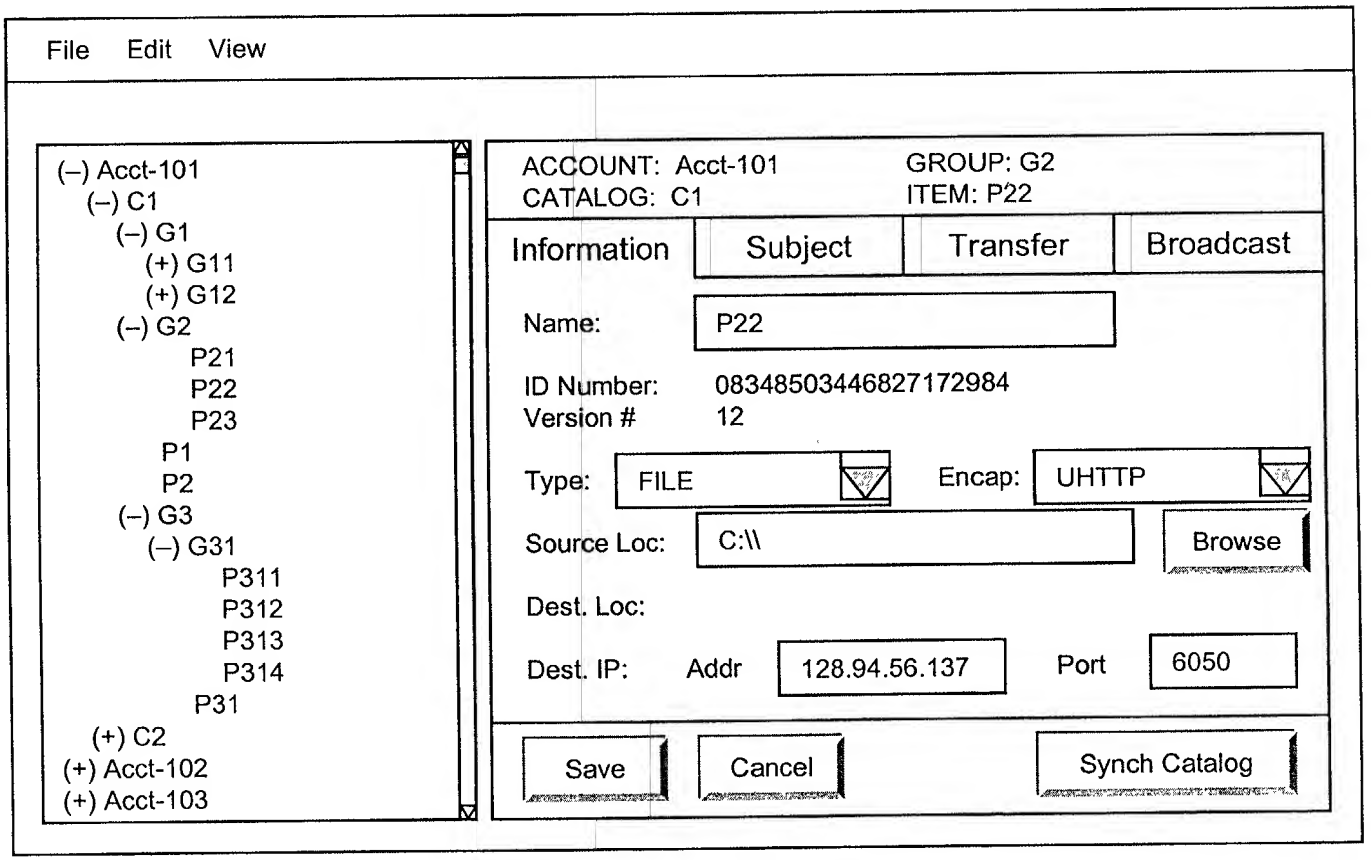


Figure 17

PO2748 "5353535"

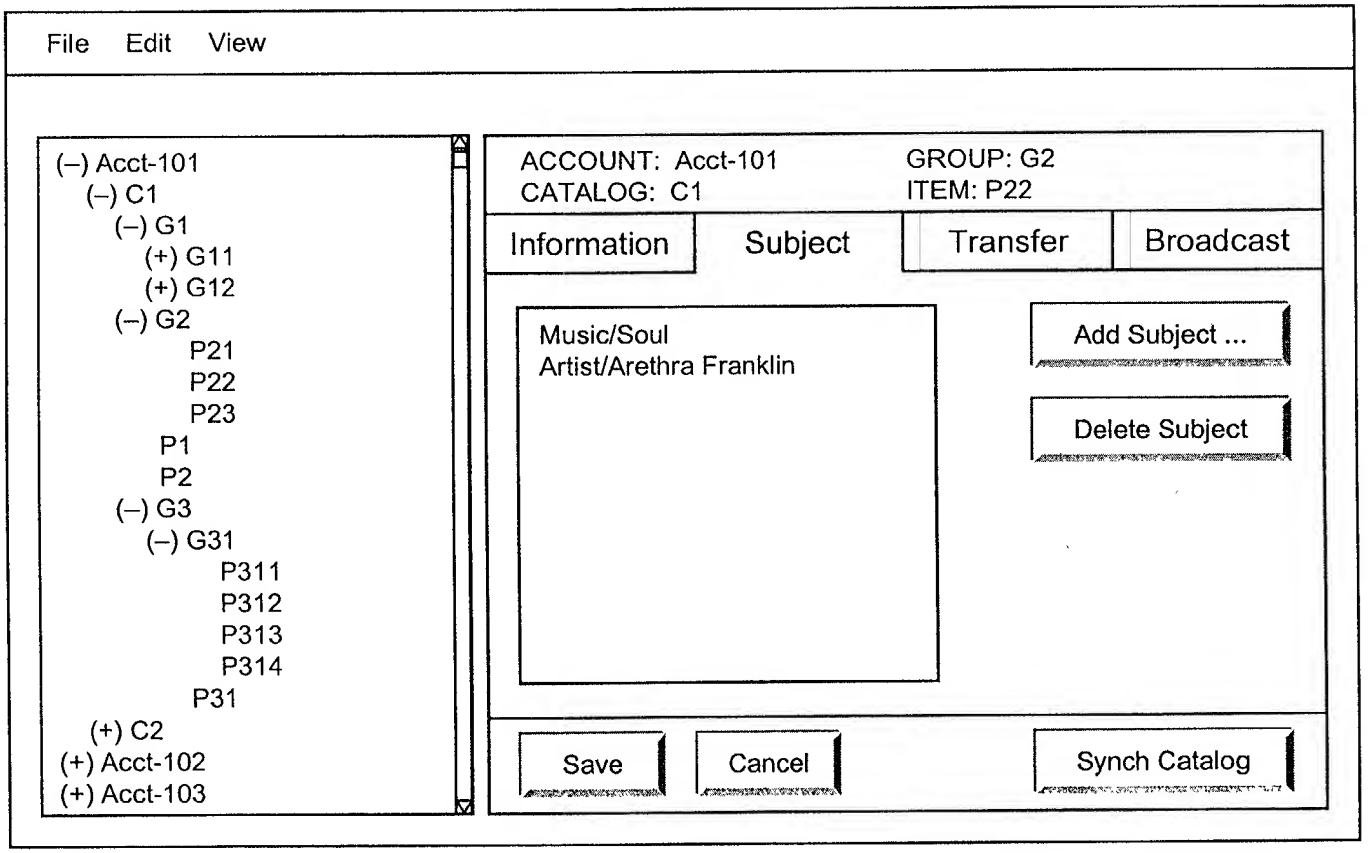


Figure 18

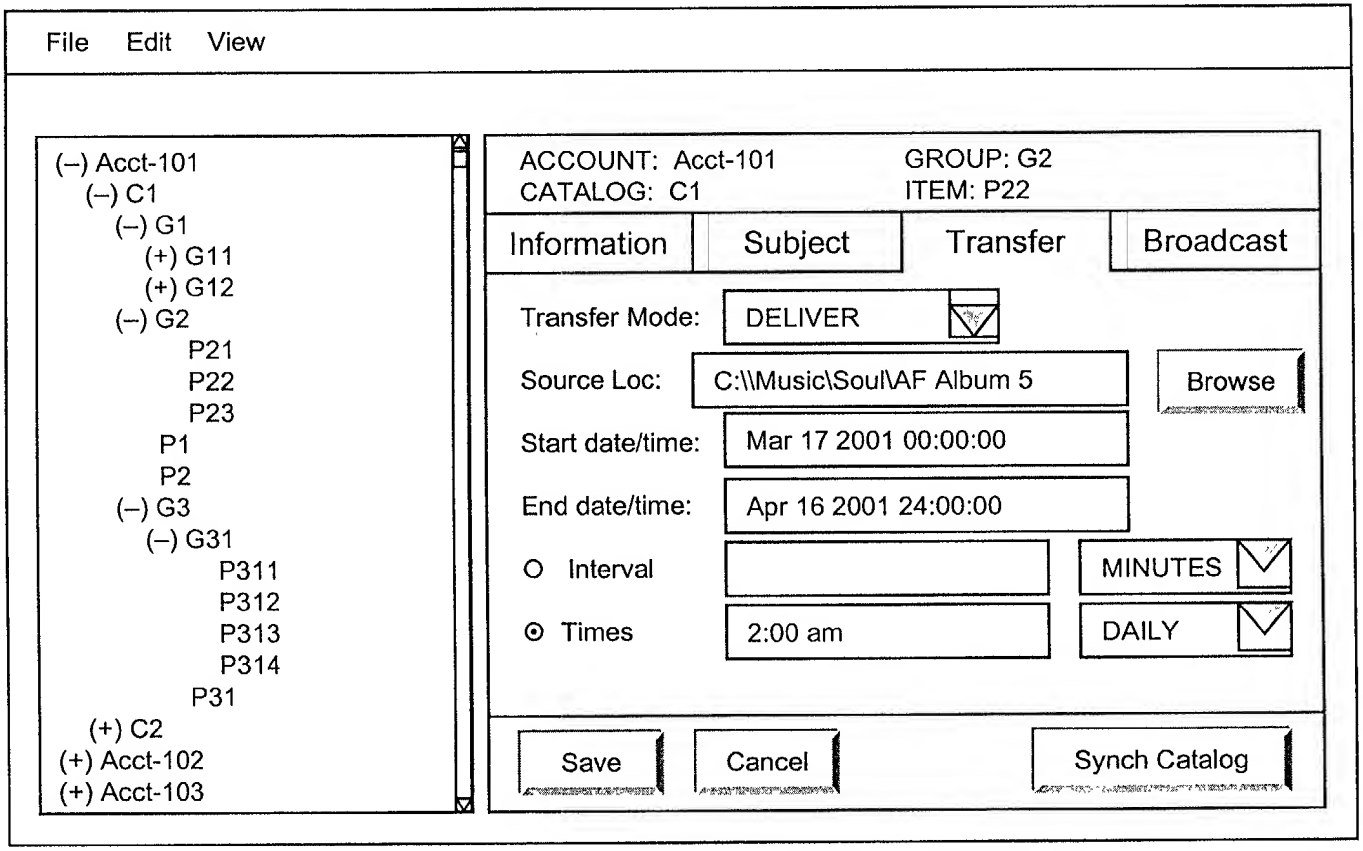

File
Edit
View
(–) Acct-101
(–) C1
(–) G1
(+) G11
(+) G12
(–) G2
P21
P22
P23
P1
P2
(–) G3
(–) G31
P311
P312
P313
P314
P31
(+) C2
(+) Acct-102
(+) Acct-103
ACCOUNT: Acct-101
GROUP: G2
CATALOG: C1
ITEM: P22
Information
Subject
Transfer
Broadcast
Transfer Mode:
DELIVER
Source Loc:
C:\\Music\Soul\AF Album 5
Browse
Start date/time:
Mar 17 2001 00:00:00
End date/time:
Apr 16 2001 24:00:00
Interval
MINUTES
Times
2:00 am
DAILY
Save
Cancel
Synch Catalog

Figure 19

TO2700 S2S5260

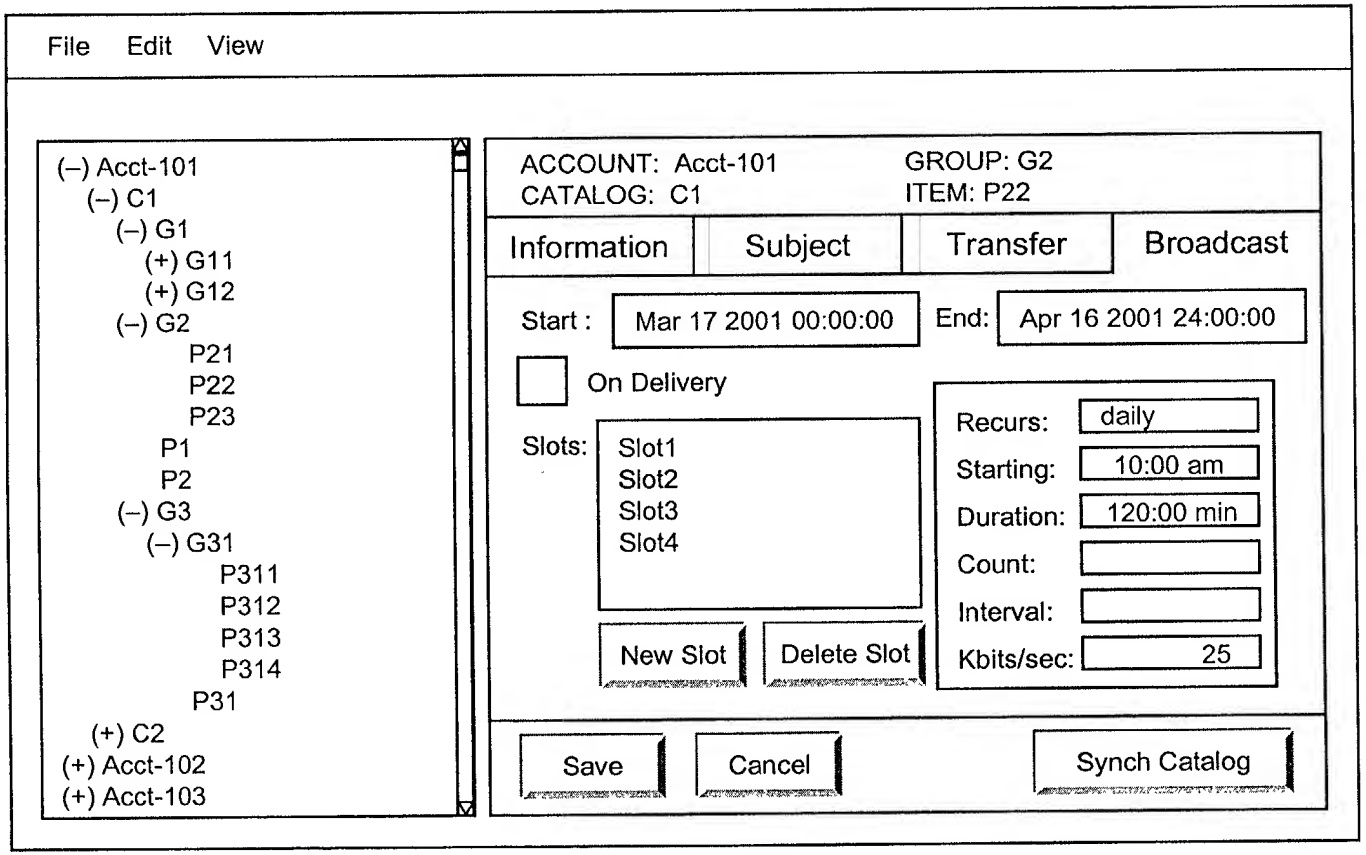


Figure 20

FOLEND STSSE360

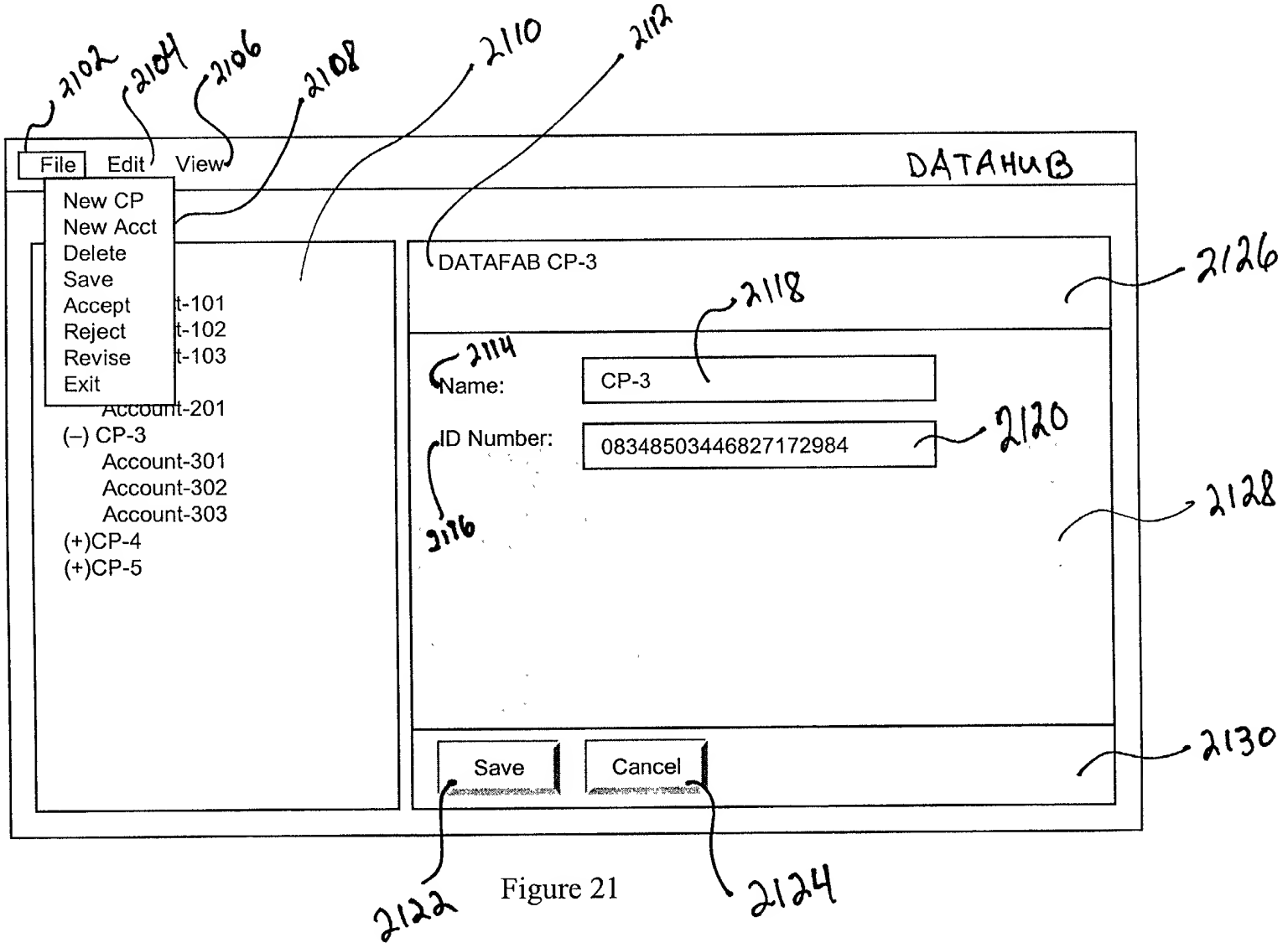


Figure 21

TOZTHUS 9795E860

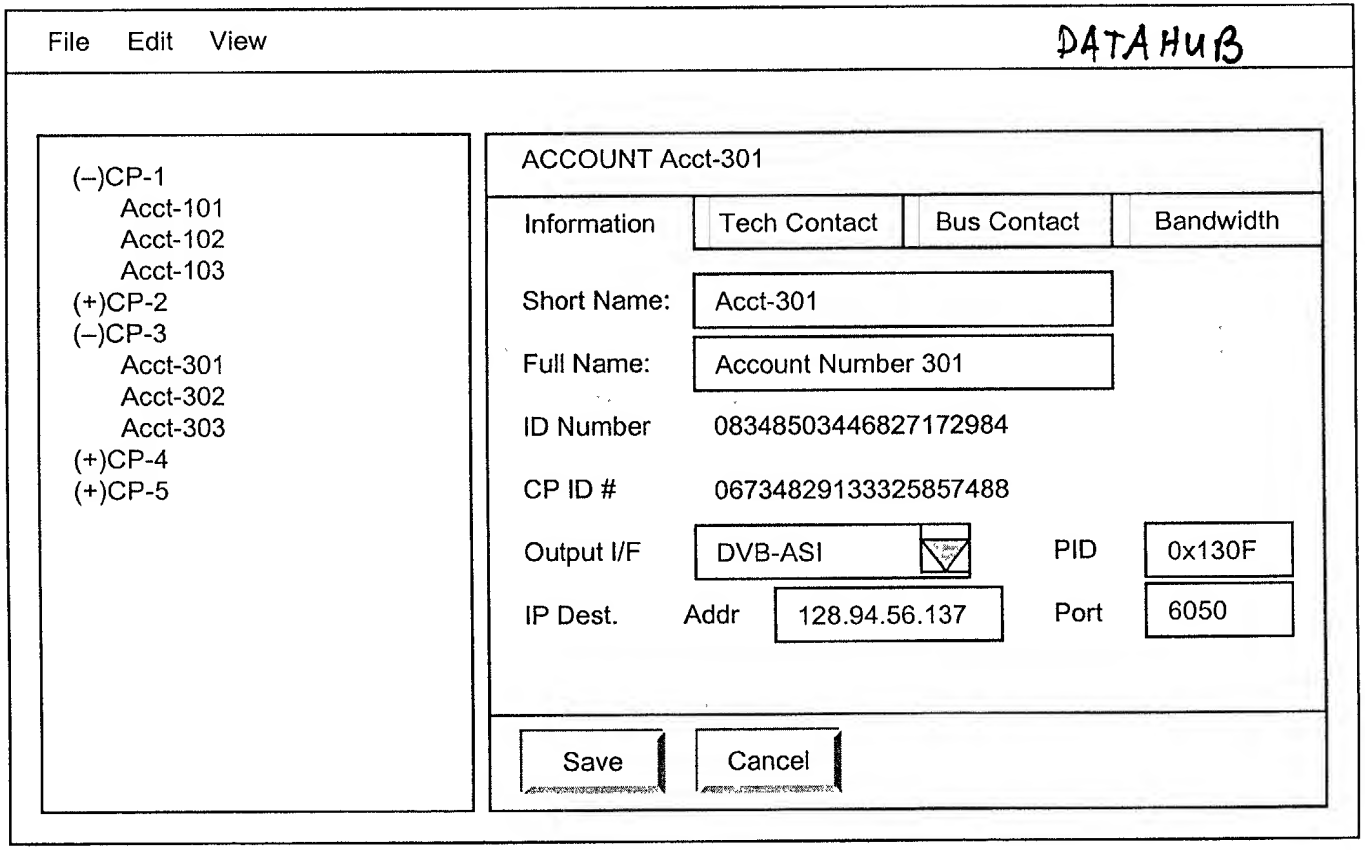


Figure 22

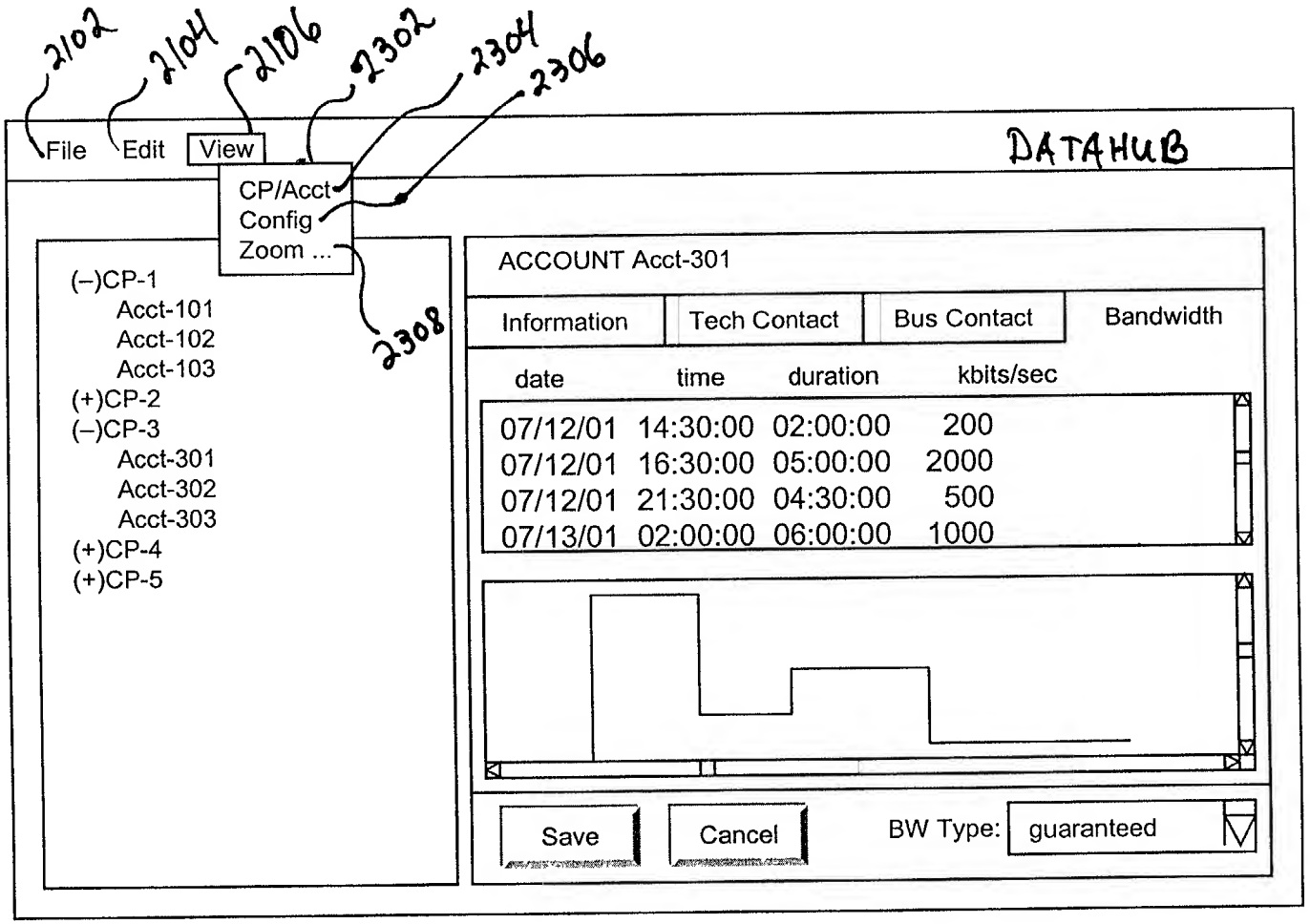

2102
2104
2106
2302
2304
2306
File
Edit
View
CP/Acct
Config
Zoom ...
2308
DATAHUB
(–)CP-1
Acct-101
Acct-102
Acct-103
(+)CP-2
(–)CP-3
Acct-301
Acct-302
Acct-303
(+)CP-4
(+)CP-5
ACCOUNT Acct-301
Information
Tech Contact
Bus Contact
Bandwidth
date
time
duration
kbits/sec
07/12/01 14:30:00 02:00:00 200
07/12/01 16:30:00 05:00:00 2000
07/12/01 21:30:00 04:30:00 500
07/13/01 02:00:00 06:00:00 1000
Save
Cancel
BW Type:
guaranteed

Figure 23

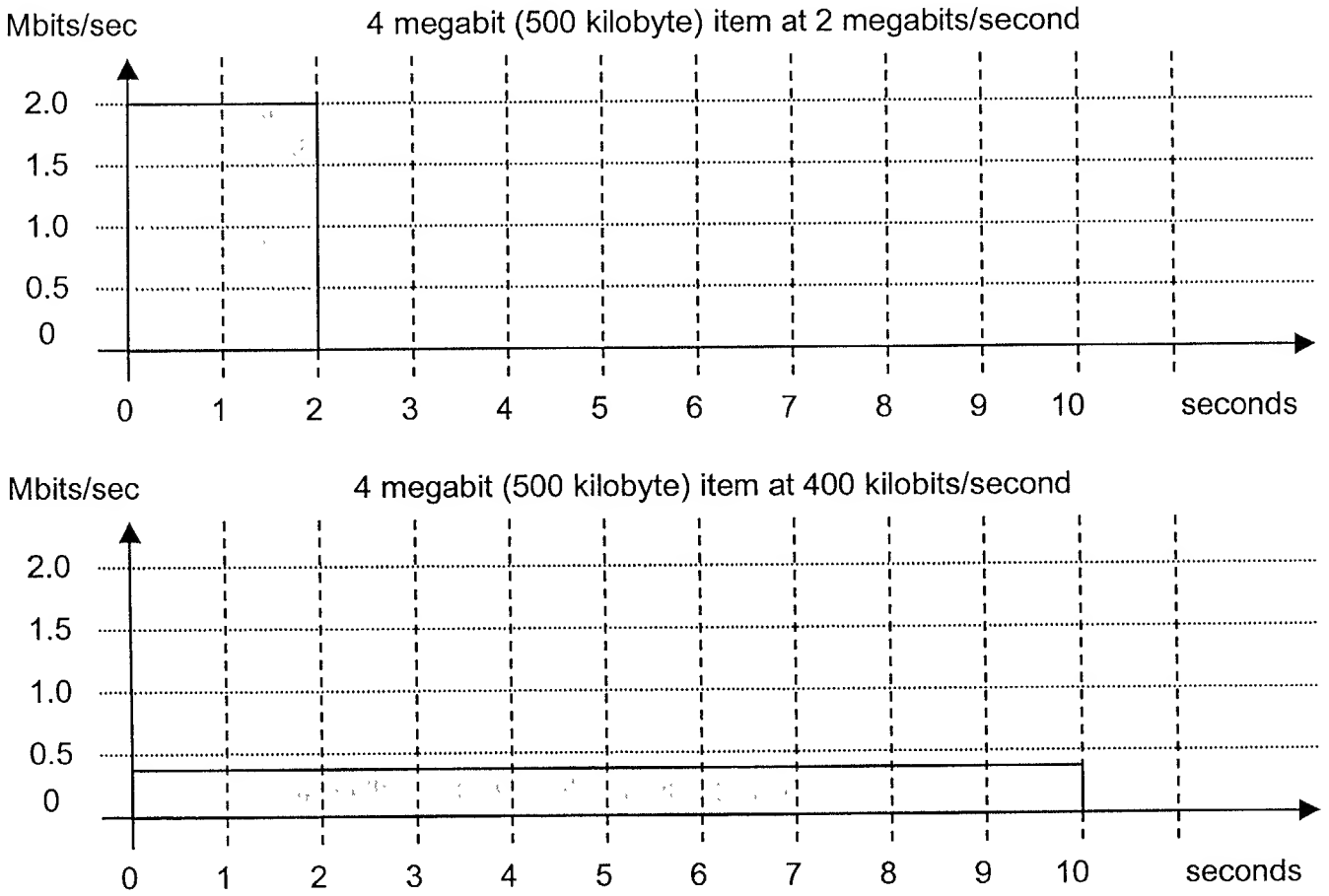
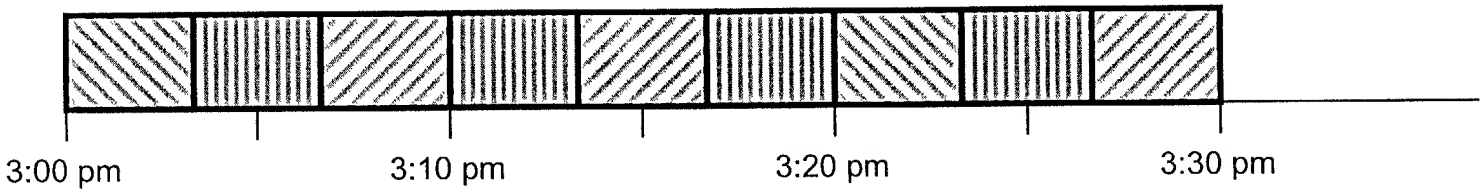

Mbits/sec
4 megabit (500 kilobyte) item at 2 megabits/second
2.0
1.5
1.0
0.5
0
0 1 2 3 4 5 6 7 8 9 10
seconds
Mbits/sec
4 megabit (500 kilobyte) item at 400 kilobits/second
2.0
1.5
1.0
0.5
0
0 1 2 3 4 5 6 7 8 9 10
seconds

Figure 24

Bandwidth limit for account: 320,000 bits/sec (40,000 bytes/sec)

Item A: size 8,000,000 bytes, start time 3:00 pm, duration 30 minutes; interval 10 minutes (timed)

Item B: size 8,000,000 bytes, start time 3:00 PM, duration 30 minutes (non-timed)



Item A gets broadcast 3 times.
Item B gets broadcast 6 times.

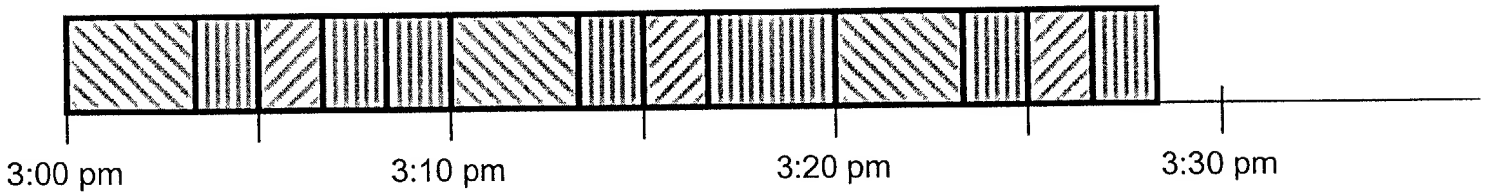
Figure 25

Bandwidth limit for account: 320,000 bits/sec (40,000 bytes/sec)

Item A: size 8,000,000 bytes, start time 3:00 pm, duration 30 minutes; interval 10 minutes (timed)

Item B: size 8,000,000 bytes, start time 3:00 PM, duration 30 minutes (non-timed)

Item C: size 4,000,000 bytes, start time 3:05 pm, duration 30 minutes; interval 10 minutes (timed)



Item A gets broadcast 3 times.
Item B gets broadcast 4 times.
Item C gets broadcast 3 times.

Figure 26

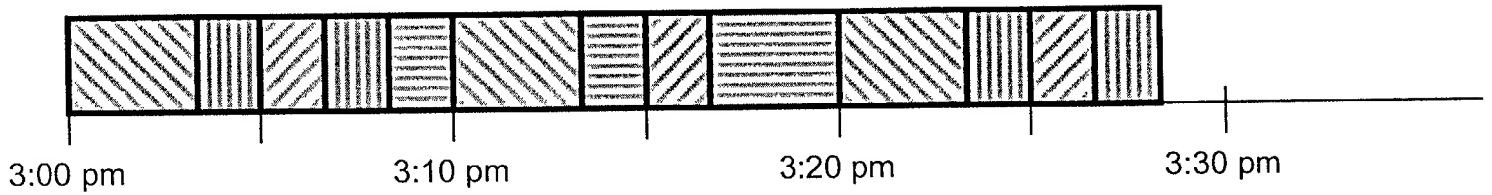
Bandwidth limit for account: 320,000 bits/sec (40,000 bytes/sec)

Item A: size 8,000,000 bytes, start time 3:00 pm, duration 30 minutes; interval 10 minutes (timed)

Item B: size 8,000,000 bytes, start time 3:00 PM, duration 30 minutes (non-timed)

Item C: size 4,000,000 bytes, start time 3:05 pm, duration 30 minutes; interval 10 minutes (timed)

Item D: size 8,000,000 bytes, start time 3:00 pm, duration 30 minutes (non-timed)



Item A gets broadcast 3 times.
Item B gets broadcast 2 times.
Item C gets broadcast 3 times.
Item D gets broadcast 1 time.

Figure 27

Parameters Specified				Behavior
Interval	**Bitrate**	**Duration**	**Count**	
Y	Y	Y	Y	If Interval < Size/Bitrate, set Interval = Size/Bitrate. Ignore Count. Broadcast at Interval using Bitrate, for Duration (timed).
Y	Y	Y	N	If Interval < Size/Bitrate, set Interval = Size/Bitrate. Broadcast at Interval using Bitrate, for Duration (timed).
Y	Y	N	Y	If Interval < Size/Bitrate, set Interval = Size/Bitrate. Broadcast at Interval using Bitrate, Count times (timed).
Y	Y	N	N	If Interval < Size/Bitrate, set Interval = Size/Bitrate. Broadcast at Interval using Bitrate, indefinitely (timed).
Y	N	Y	Y	Set Bitrate = account bitrate. If Interval < Size/Bitrate, set Interval = Size/Bitrate. Ignore Count. Broadcast at Interval using Bitrate, for Duration (timed).
Y	N	Y	N	Set Bitrate = account bitrate. If Interval < Size/Bitrate, set Interval = Size/Bitrate. Broadcast at Interval using Bitrate, for Duration (timed).
Y	N	N	Y	Set Bitrate = account bitrate. If Interval < Size/Bitrate, set Interval = Size/Bitrate. Broadcast at Interval using Bitrate, Count times (timed).
Y	N	N	N	Set Bitrate = account bitrate. If Interval < Size/Bitrate, set Interval = Size/Bitrate. Broadcast at Interval using Bitrate, indefinitely (timed).

Fig. 28A

Parameters Specified				Behavior
Interval	**Bitrate**	**Duration**	**Count**	
N	Y	Y	Y	Set Interval = Duration/Count. If Interval < Size/Bitrate, set Interval = Size/Bitrate. Broadcast at Interval using Bitrate, for Duration (timed).
N	Y	Y	N	Set Interval = Size/Bitrate. Broadcast at Interval using Bitrate, for Duration (timed).
N	Y	N	Y	Set Interval = Size/Bitrate. Broadcast at Interval using Bitrate, Count times (timed).
N	Y	N	N	Set Interval = Size/Bitrate. Broadcast at Interval using Bitrate, indefinitely (timed).
N	N	Y	Y	Set Bitrate = account bitrate. Set Interval = Duration/Count. If Interval < Size/Bitrate, set Interval = Size/Bitrate. Broadcast at Interval using Bitrate, for Duration.
N	N	Y	N	Broadcast for Duration (non-timed).
N	N	N	Y	Broadcast Count times (non-timed).
N	N	N	N	Broadcast indefinitely (non-timed).

Fig. 28B

TOKEN: 5595680

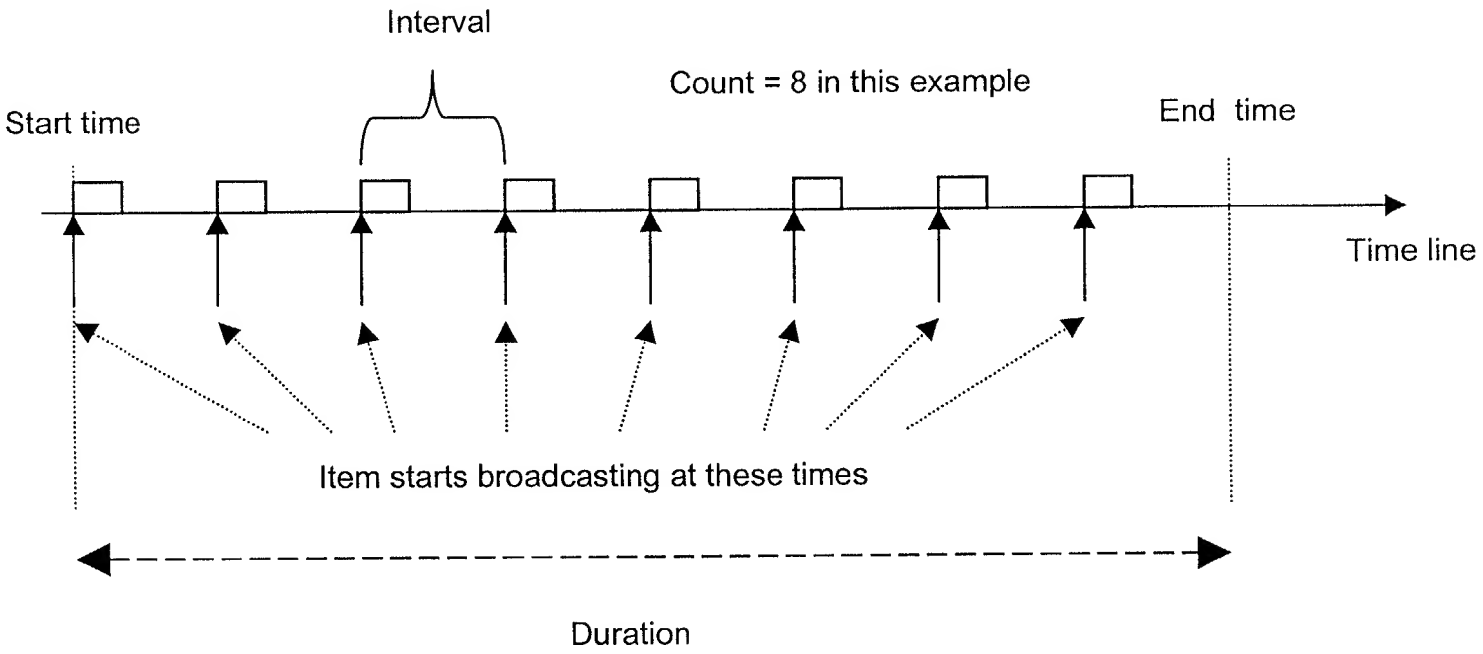


Figure 29

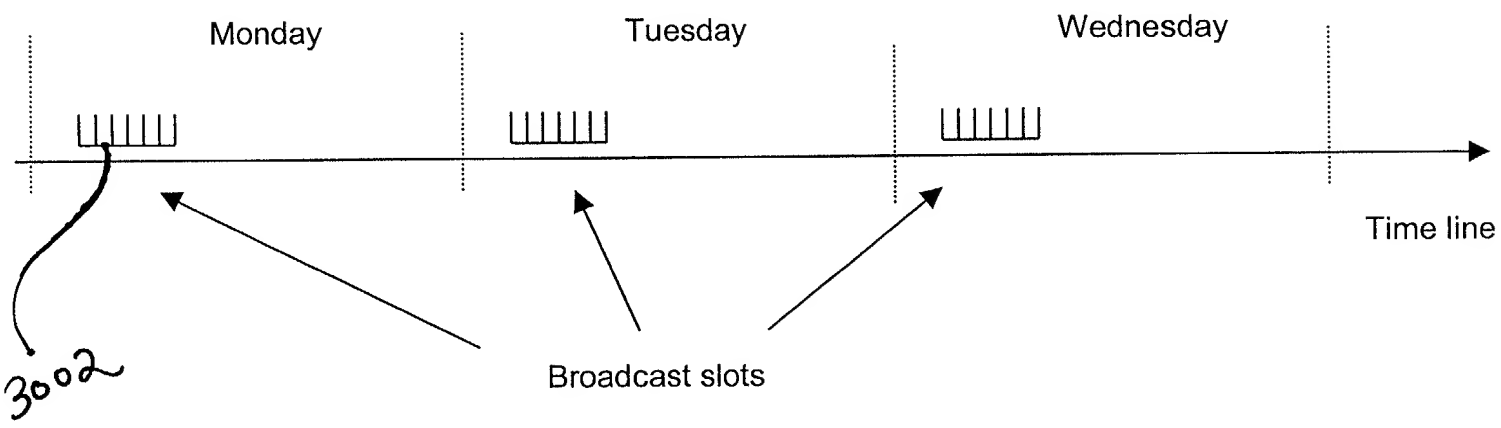


Figure 30

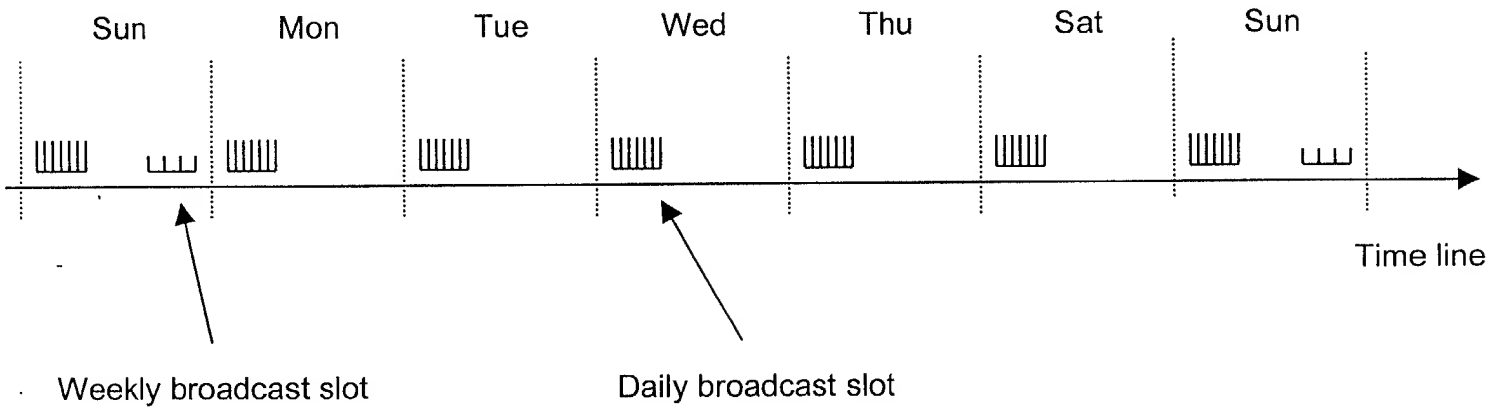

Sun
Mon
Tue
Wed
Thu
Sat
Sun
Time line
Weekly broadcast slot
Daily broadcast slot

Figure 31

TOZTHO" 9T9526O0

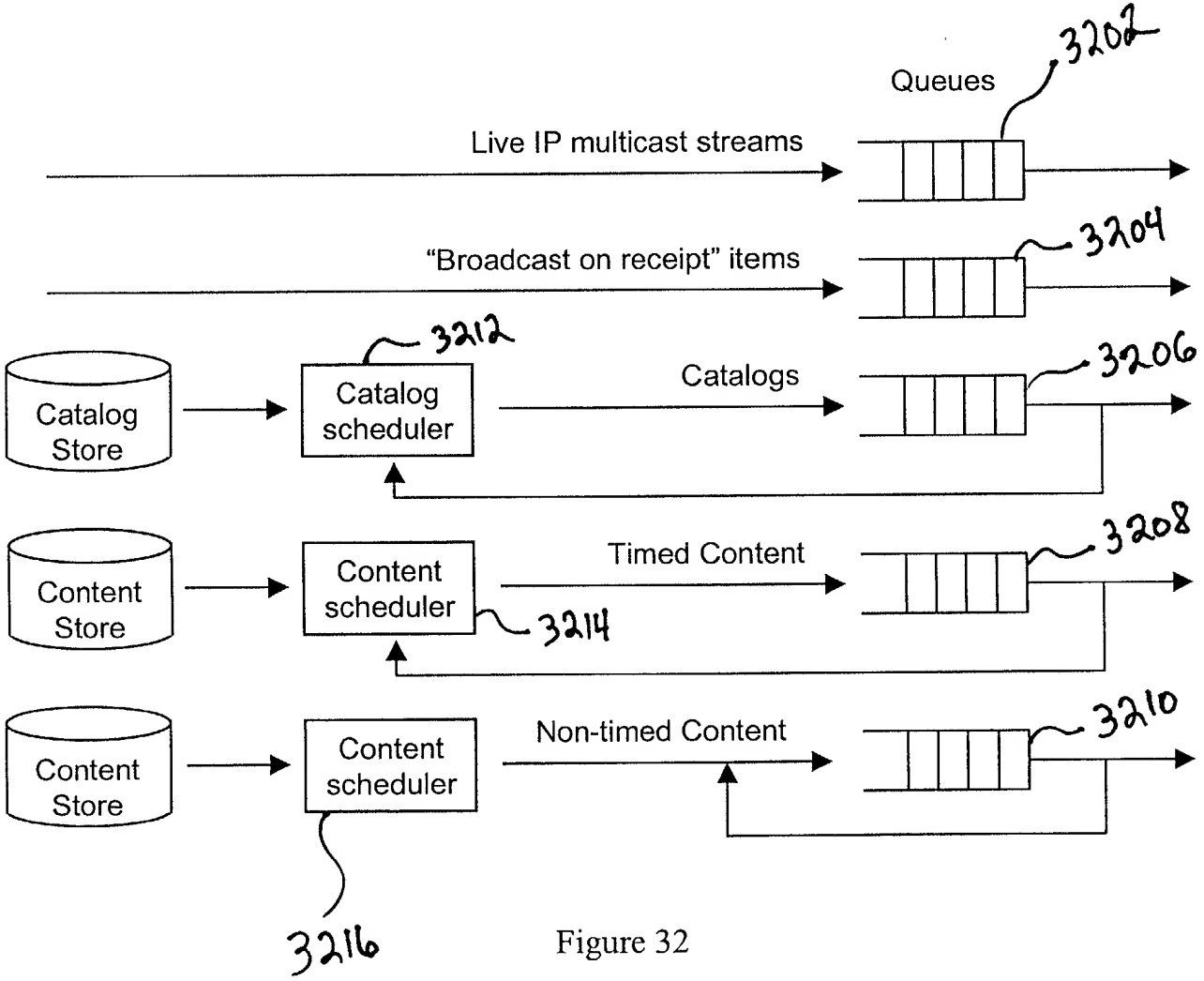


Figure 32

Example: Account bitrate limit: 500 kbits/sec (62,500 bytes/sec)
Time slice: 200 millisecond (0.2 second)
Can broadcast up to 12,500 bytes during timeslice

Items in combined queues (in order of overallpriority)	Disposition of items
Item A Size: 15,000 bytes Bitrate limit: 200 kbits/sec (25,000 bytes/sec, 5,000 bytes/slice)	5,000 bytes taken; rest of item remains on queue in same position
Item B Size: 4,000 bytes Bitrate limit: none specified	All 4,000 bytes taken; item is taken off of queue
Item C Size: 4,000 bytes Bitrate limit: 100 kbits/sec (12,500 bytes/sec, 2,500 bytes/slice)	2,500 bytes taken; rest of item remains on queue in same position
Item D Size: 20,000 bytes Bitrate limit: none specified	500 bytes taken; rest of item remains on queue in same position

Figure 33

TOZTHO 3T3SZ6OD

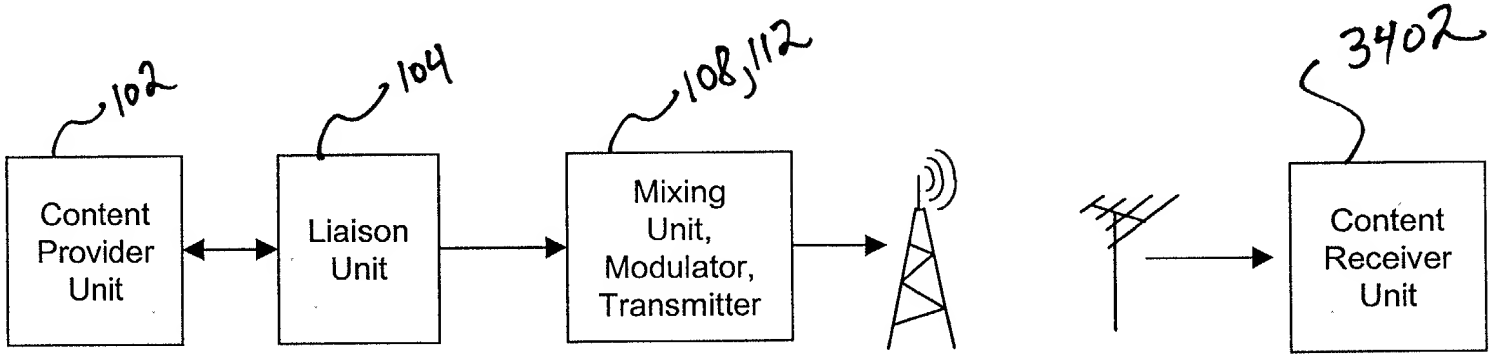


Figure 34

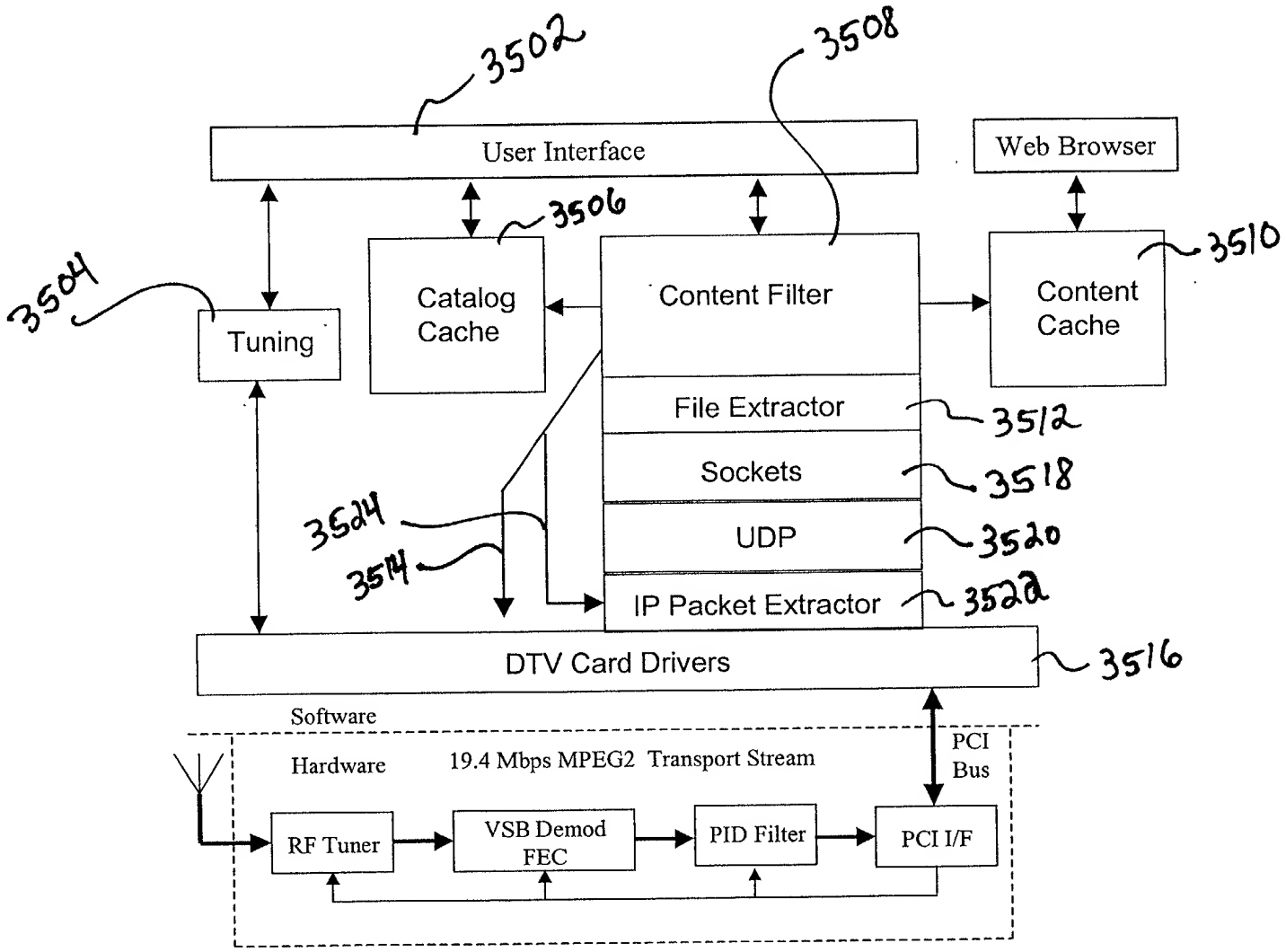

3502
3508
User Interface
Web Browser
3506
3504
Tuning
Catalog Cache
Content Filter
Content Cache
3510
File Extractor
3512
Sockets
3518
3524
UDP
3520
3514
IP Packet Extractor
3522
DTV Card Drivers
3516
Software
Hardware
19.4 Mbps MPEG2 Transport Stream
PCI Bus
RF Tuner
VSB Demod FEC
PID Filter
PCI I/F

Figure 35

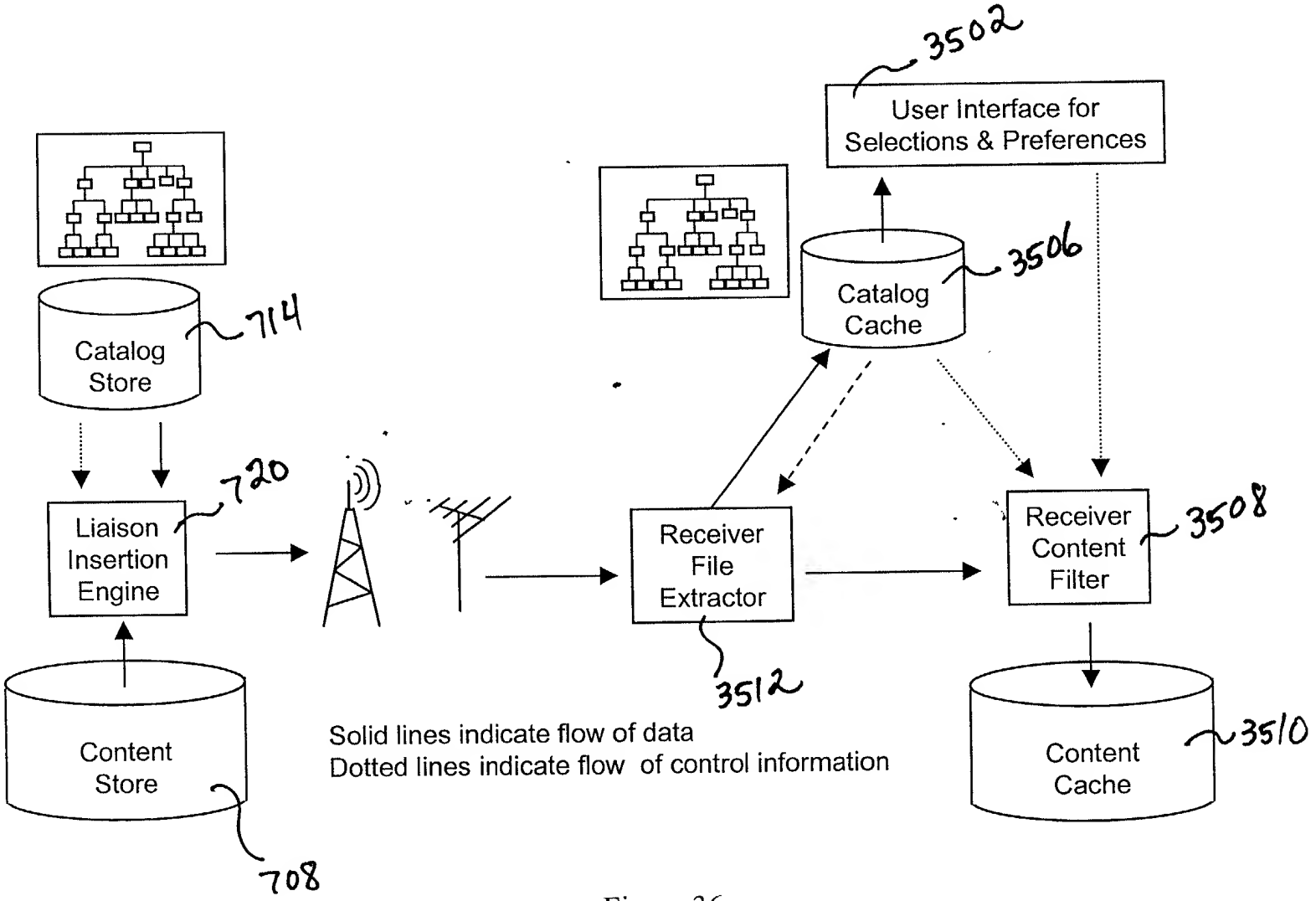

3502
User Interface for Selections & Preferences
Catalog Cache
3506
Catalog Store
714
Liaison Insertion Engine
720
Receiver File Extractor
3512
Receiver Content Filter
3508
Content Store
708
Content Cache
3510
Solid lines indicate flow of data
Dotted lines indicate flow of control information

Figure 36

DOCKET ALARM

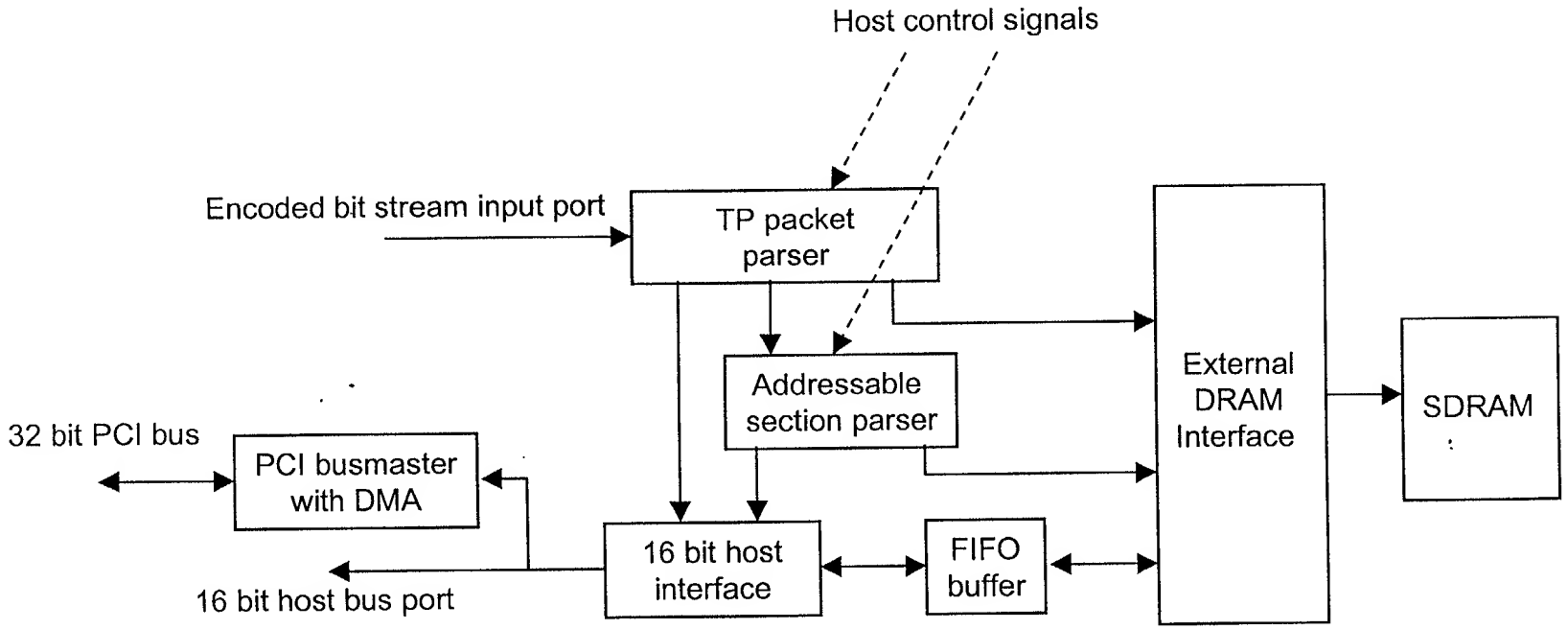


Figure 37

Patent Pending

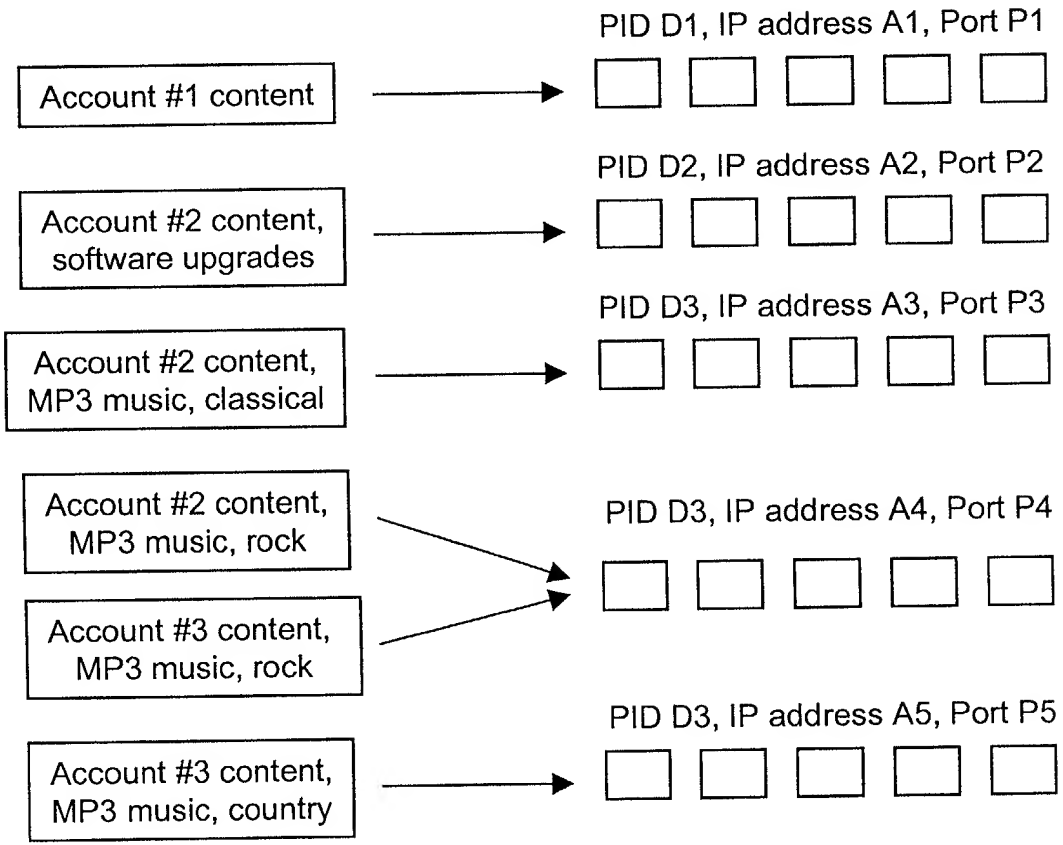


Figure 38

TOZTMO 9T5SE80D

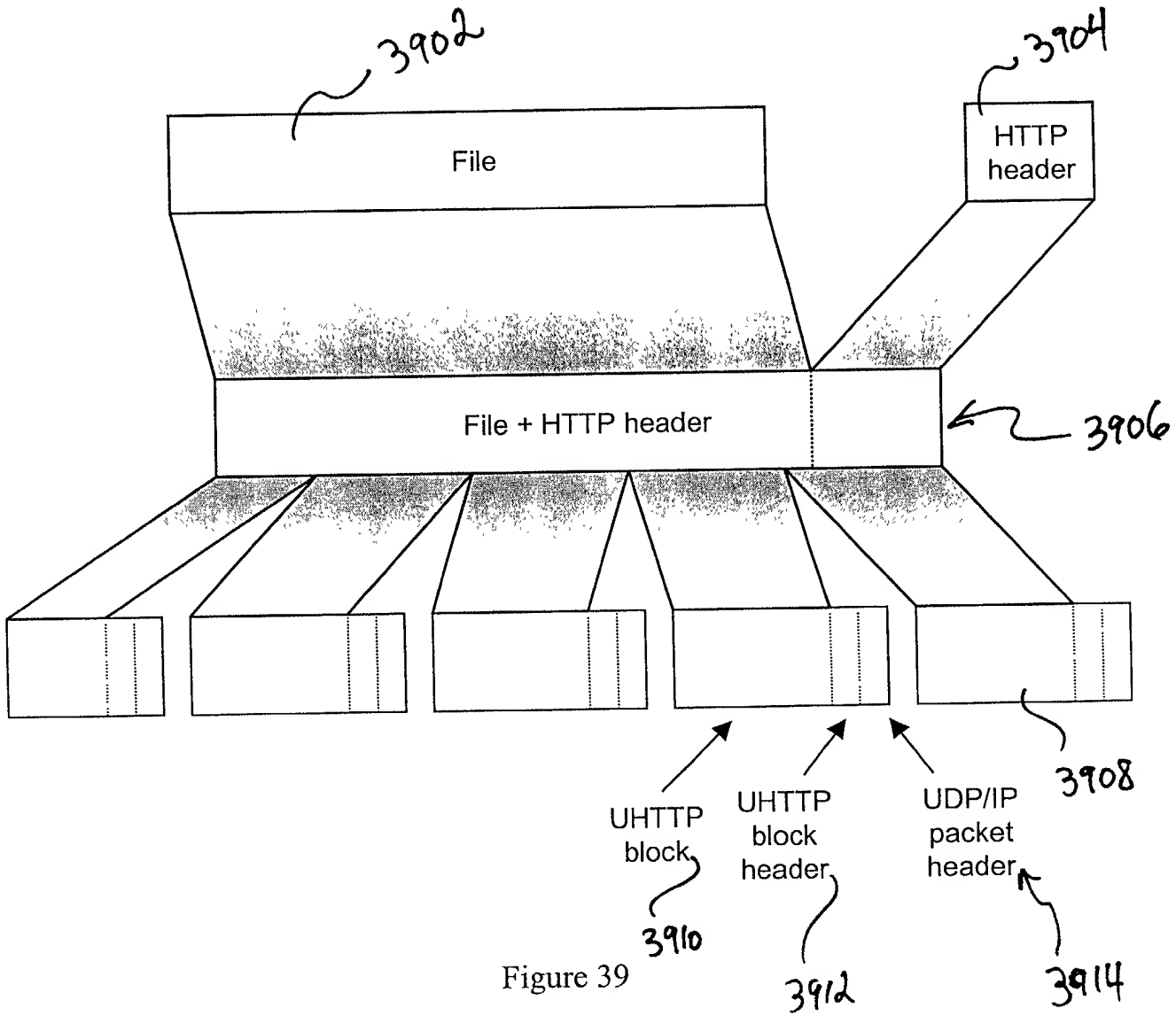


Figure 39

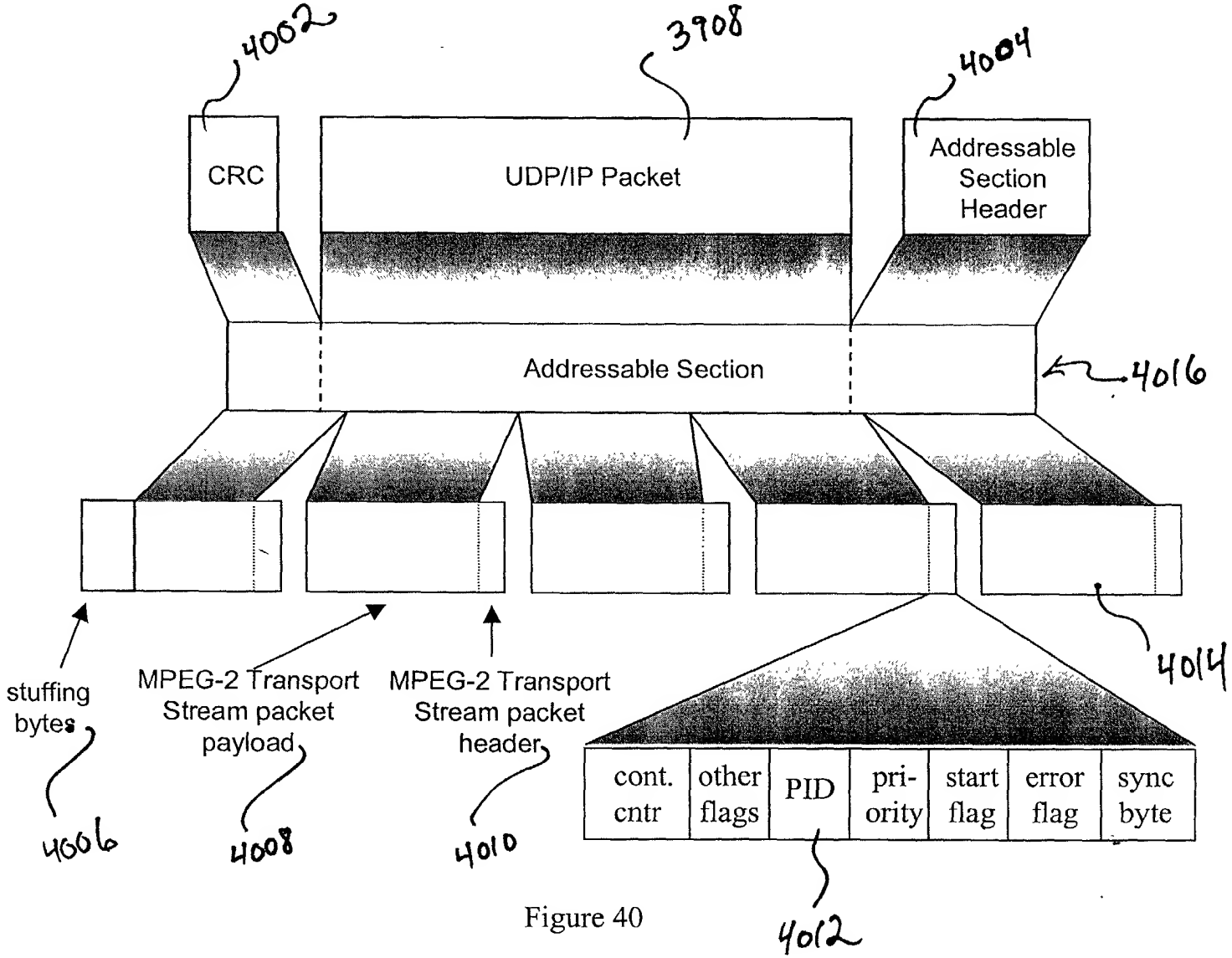

4002
3908
4004
CRC
UDP/IP Packet
Addressable Section Header
Addressable Section
4016
4014
stuffing bytes
MPEG-2 Transport Stream packet payload
MPEG-2 Transport Stream packet header
4006
4008
4010
cont. cntr
other flags
PID
pri-ority
start flag
error flag
sync byte
4012

Figure 40